LEVEL ONE

ANCIENT EGYPT AND THE EAST

1935. DECEMBER. PART II.

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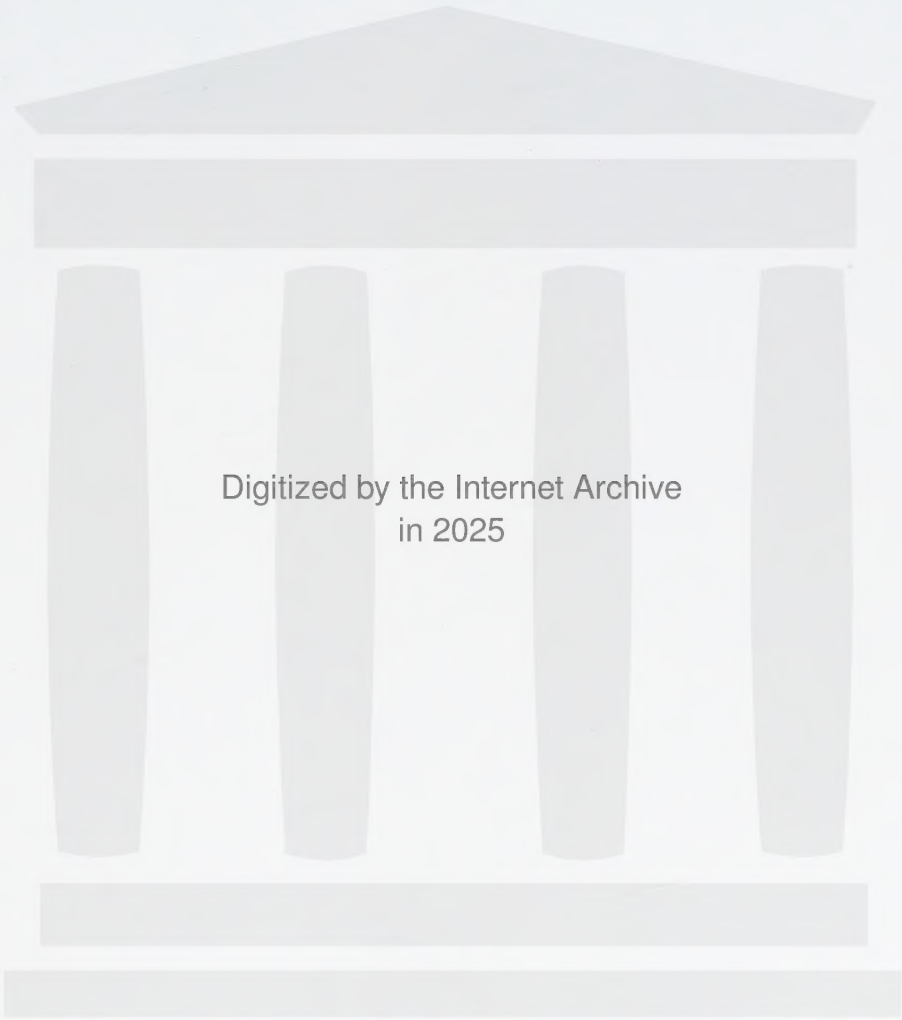

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FRONTISPIECE.

GENERAL VIEW OF RUINED TEMPLE OF 'AIN AMUR.

(*See page* 108.)

ANCIENT EGYPT AND THE EAST

POTTERY AND BEADS FROM NEAR NEHAVAND, N.W. PERSIA, IN THE ASHMOLEAN MUSEUM.

During the last few years the Ashmolean Museum has acquired two small groups of pottery, both said to come from near Nehavand in N.W. Persia. With the second group there were included three strings of beads, which presumably

ANCIENT EGYPT AND THE EAST.

The Editors regret that the publication of ANCIENT EGYPT AND THE EAST will cease with the current number, in which is included the index which completes Volume R–U, 1932–5.

It is hoped that subscribers will continue to support the British School of Archaeology in Egypt, whose activities in the field will be carried on as before under the direction of Professor Sir Flinders Petrie.

*The headquarters of the School remain at University College, London, W.C.*1.

n in the market in speculation was rife expedition led by in, a mound near consisting of three s, and below them eliminary report of 14, p'ls. I–III.[2] A ographs of similar ave been published few stray examples ut no attempt has oundation by giving s. It is the feeling that such an attempt is needed that has led to the writing of the present article.

The account of the strata and finds given in the Tepe Giyan preliminary report makes it clear that amongst the Oxford series of pots there are examples of ware belonging to all three divisions of the upper or "tomb" stratum of that *tell*. No example of ware from the lower or "habitation" stratum appears to be present. This is but natural, for these pots come from clandestine digging in tombs, and not from official excavation of a habitation layer. It is, indeed,

[1] *Pottery*—Ash. Mus. 1930. 456–9: 1934. 38–49.
Beads—Ash. Mus. 1934. 50–2.

[2] Henceforth referred to as *Contenau and Ghirshman.*

[3] *BMQ* III, 69, pl. xxxix; IV, 4, pl. v; V, 10, pl. ii; VII, 80, pl. xxviii.

[4] E.g., Frankfort, *Arch. and the Sumerian Problem,* fig. 10; Contenau, *Manuel d'Arch. Orient.,* pp. 647 and 1576, figs. 450–1; De Mecquenem, *Mém. Délég. en Perse,* XX, 121–5, figs. 28–30.

probable that they actually come from rifled tombs at Tepe Giyan itself, for Contenau and Ghirshman say that when they first saw the *tell* it had been honeycombed by tomb-robbers.

The pots have therefore been catalogued in three groups, A–C, corresponding with the three levels of Contenau and Ghirshman's upper stratum, beginning with the lowest. These groups will henceforth be referred to as Tepe Giyan A, B, C.

PLATE I.

Pottery.

Group A (Pls. I, IA, figs. 1–7).

1. Ash. Mus. 1930. 456.

Large jar, smooth-surfaced, gritty ware with some mica dust, pinkish paste, wet-smoothed with buff; everted rim, concave neck, angular shoulder, globular body, concave base; linear decoration combined with a frieze of conventionalised birds in blackish-brown matt paint. H. 0·276m. G.D. 0·306m.

For the shape and decoration, compare Contenau and Ghirshman, p. 8, pl. III, 4; *BMQ* IV, pl. v b, and V, pl. ii; Frankfort, *ASP*, fig. 10; Contenau, *Manuel*, p. 646, fig. 450. For the decoration only, compare *MDP* XX, fig. 28, 6.

2. Ash. Mus. 1934. 40.

Small jar, smooth-surfaced, gritty ware, pinkish-brown paste, wet-smoothed with buff; everted rim, concave neck, angular shoulder, globular body, flat base; linear decoration in blackish-brown matt paint. H. 0·074m. G.D. 0·094m.

3. Ash. Mus. 1930. 458.

Small jar, ware as last, red paste, wet-smoothed with lighter red; shape as last; linear decoration in purplish-brown matt paint. H. 0·07m. G.D.0·086m.

4. Ash. Mus. 1930. 457.

Small jar, ware as last, pinkish-brown paste, wet-smoothed with buff; unevenly shaped and coarsely finished; everted rim, concave neck, angular shoulder, globular body, rounded base; linear decoration in blackish-brown matt paint. H. 0·10m. G.D. 0·106m.

For the shape and decoration of nos. 2–4, compare Contenau and Ghirshman, p. 8, pl. III, 1; *BMQ* VII, pl. xxviii a and c; *MDP* XX, fig. 28, 5.

5. Ash. Mus. 1934. 38.

Large jar, rough-surfaced, gritty ware, pinkish paste, wet-smoothed with buff; everted rim, concave neck, inverted-ovoid body, concave base; linear decoration with cross-hatched, crenellated, and fish-bone pattern in blackish-brown matt paint; in addition, two pairs of small blobs of clay added in relief on the neck before wet-smoothing. H. 0·21m. G.D. 0·226m.

For the shape and decoration, compare Contenau and Ghirshman, p. 8; *BMQ* IV, pl. v b.

6. Ash. Mus. 1930. 459.

Small, one-handled jar, ware, paste, and finish as last; everted rim, concave neck, inverted-ovoid body with carination, rounded base; linear decoration in blackish-brown matt paint. H. 0·078m. G.D. 0·088m.

For the shape, compare Contenau and Ghirshman, pl. III, 2; *BMQ* VII, pl. xxviii f. For the shape, but with a spout instead of a handle, compare *BMQ* III, pl. xxxix a 4: *MDP* XX, fig. 28, 3.

7. Ash. Mus. 1934. 42.

Small jar, smooth-surfaced, gritty ware, brown paste, wet-smoothed with buff; everted rim, concave neck, sloping shoulder, inverted-ovoid body with carination, rounded base; linear decoration in blackish-brown matt paint. H. 0·08m. G.D. 0·102m.

PLATE II.

8

9

Group B (Pls. II, IIA, figs. 8, 9).

8. Ash. Mus. 1934. 45.

Small, one-handled jar, smooth-surfaced, gritty ware, brown paste, colour-coated over the whole exterior and on the inside of the lip with dark, reddish-brown, the colour-coat afterwards burnished; everted rim, concave neck, carinated, bulbous body, hand-finished from the carination downwards, uneven, slightly convex base; linear decoration in black matt paint. H. 0·084m. G.D. 0·088m.

This dark red ware is discussed by Contenau and Ghirshman, p. 7. For the shape of this vase, compare *BMQ* VII, pl. xxviii, d. Similar shapes are illustrated in *BMQ* III, pl. xxxix, 2: *BMQ* IV, pl. v c 10.

9. Ash. Mus. 1934. 46.

Beaker on three feet, smooth-surfaced, gritty ware, brown paste, colour-coated over the whole exterior and on the inside of the lip with matt red; everted rim, concave-sided body, rounded base standing on three added feet; no decoration. H. 0·076m. G.D. 0·084m.

For the shape, but with small excrescent vases on the rim, compare Contenau and Ghirshman, pl. II, 4.

PLATE III.

Group C (Pls. III, IIIA, figs. 10–16).

10. Ash. Mus. 1934. 39.

Beaker, smooth-surfaced, gritty ware, pinkish-brown paste, wet-smoothed with buff; everted rim, concave-sided body, solid base-ring; linear and figured decoration in purple paint in two friezes, the upper consisting of groups of solid triangles, the lower of two panels containing three birds each, alternating with panels of cross-hatched lattice and solid triangles; the exterior, except the base, afterwards burnished. H. 0·122m. G.D. 0·098m.

For a similar shape, compare *BMQ* IV, pl. v c 9. For the decoration only, compare Contenau and Ghirshman, p. 7; Contenau, *Manuel*, p. 647, fig. 451.

11. Ash. Mus. 1934. 44.

Small jar, ware as last, brown paste, wet-smoothed with buff; everted rim, concave neck, carinated, oval body, solid base-ring; linear and figured decoration in faded purple paint in two friezes, the upper consisting of three crenellated panels with dot-rosettes, the lower of three panels each containing two birds and a dot-rosette, alternating with panels of cross-hatched lattice and fish-bone pattern; the exterior, except the base, afterwards burnished. H. 0·082m. G.D. 0·082m.

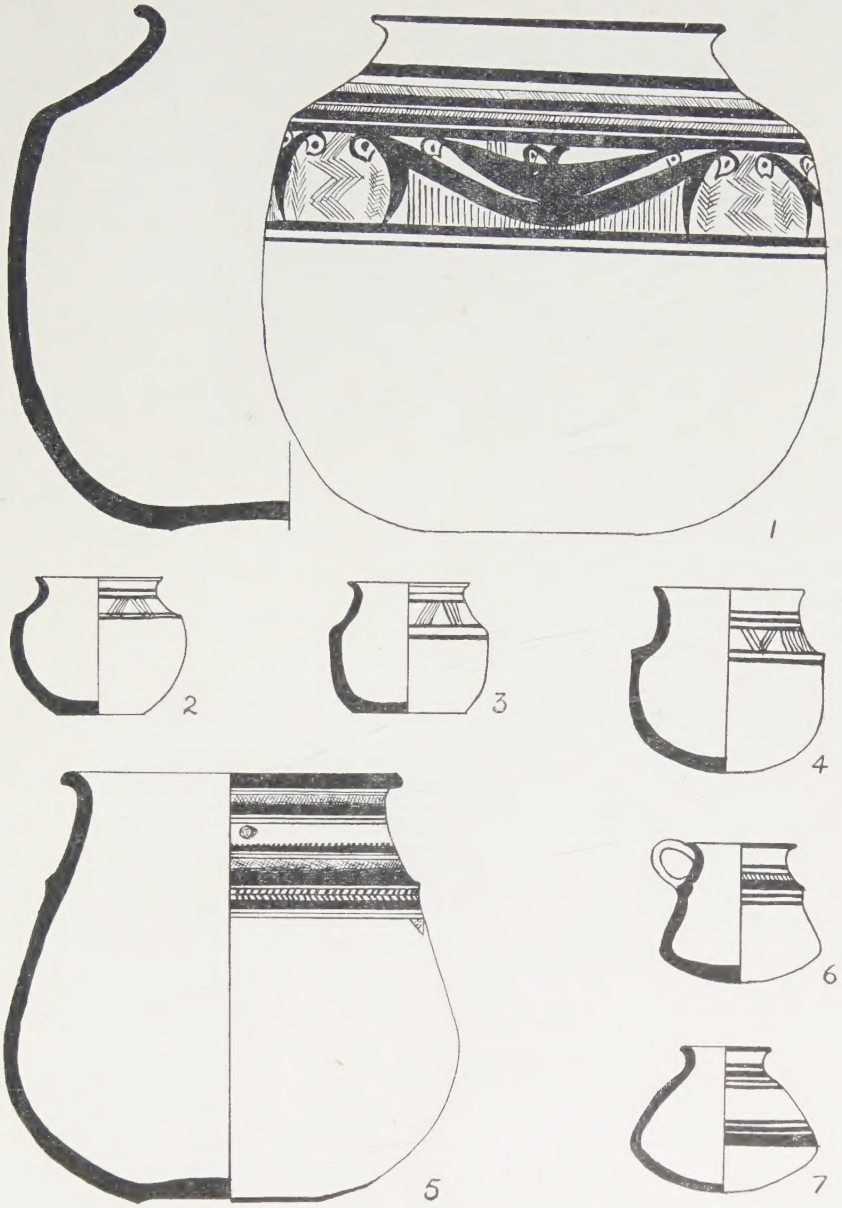


PLATE IA.

For the shape and decoration, compare *MDP* XX, fig. 30. For the decoration only, compare Contenau and Ghirshman, p. 7; Contenau, *Manuel*, p. 647, fig. 451.

12. Ash. Mus. 1934. 41.

Beaker, smooth-surfaced, gritty ware, pinkish paste, wet-smoothed with buff; everted rim, concave-sided body, flat base; linear decoration in faded blackish-brown matt paint with three friezes: (*a*) cross-hatched lattice, (*b*) alternating solid and cross-hatched lozenges, (*c*) groups of sloping lines alternately right and left. H. 0·074m. G.D. 0·08m.

13. Ash. Mus. 1934. 43.

One-handled goblet, smooth-surfaced, straw-tempered ware, brownish paste,

wet-smoothed with buff; everted rim, concave neck, cylindrical body on a tapering stem, splayed foot slightly concave below; linear decoration in blackish-brown matt paint in two friezes of cross-hatched and diagonal-hatched panels and sloping ladders. H. 0·15m. G.D. 0·08m.

For a similar shape but without the upper carination, compare Contenau and Ghirshman, pl. II, 3; *BMQ* IV, pl. v c 8 and 14. For the same shape, but fatter and squatter, compare Contenau, *Manuel*, p. 647, fig. 451.

PLATE IIA.

14. Ash. Mus. 1934. 47.

One-handled jug; soft, fine ware, now flaking and decomposed, grey paste, burnished vertically on outside of neck and horizontally on outside of body and on inside of rim; concave neck, angular shoulder, convex body, solid base-ring, slightly concave below; no decoration. H. 0·078m. G.D. 0·072m.

This grey ware imitating metal is discussed by Contenau and Ghirshman, p. 7. For the shape and ware, compare *BMQ* VII, pl. xxviii e.

15. Ash. Mus. 1934. 49.

One-handled bowl with bridge-spout; soft, gritty, hand-made ware, brown paste, coated over whole of outside as well as on inside of lip with reddish-brown, which has afterwards been burnished; slightly concave neck, bulbous body, solid base-ring concave below; thumb-piece on handle and strengthening bridge across spout at rim; no decoration. H. 0·09m. G.D. 0·094m.

This brown-burnished ware imitating metal is discussed by Contenau and Ghirshman, p. 7.

16. Ash. Mus. 1934. 48.

One-handled bowl with channel-spout; soft, gritty ware, grey paste, burnished

PLATE IIIA.

over the whole of the outside except the under side of the base ; carinated body tapering towards neck and base, base flat ; handle with elaborate thumb-piece, channelled on top ; plain, hemicylindrical, channelled spout ; on the shoulder is a zigzag raised ridge with dots in the angles, carved out of the clay of the pot and not barbotined on. H. of bowl 0·064m. G.D. of bowl 0·074m.

This grey ware imitating metal is discussed by Contenau and Ghirshman, p. 7.

PLATE IV.

Beads (Pl. IV).

1. Ash. Mus. 1934. 50. String of beads, glass or faience, both materials originally yellow or white, but now weathered to a whitish or buff tone, often iridescent ; mostly irregular squat spherical, but a few plain or segmented cylinders, and barrels. Total length as strung 0·425m.

2. Ash. Mus. 1934. 51. String of beads, glass or faience, mostly as last string, but some of blue or green material and scarcely weathered ; the majority are irregular spherical or squat spherical, others are plain or segmented cylinders, barrels, small melons and lentoids ; in the centre are two flat spacers of turquoise-blue colour. Total length as strung 0·54m.

3. Ash. Mus. 1934. 52. String of beads, mostly glass or faience, but three stone and one bronze ; the glass and faience specimens were originally yellow or white and are now weathered to a white, buff or brown tone, the three stone beads are of banded yellow limestone, green steatite, and black and white diorite respectively ; the majority are irregular spherical, squat spherical, or barrels ; amongst other shapes are two lentoids, four conical pendants, and three knuckle-bones. Total length as strung 0·048m.

It will appear from a study of this catalogue that not only does the technique of dark-on-light linear decoration on pottery continue throughout the three levels, but that many of the decorative motives, e.g., crenellation and fish-bone lines, remain constant also, though shapes change. The appearance of red ware in group B and of hand-made grey and red burnished ware in group C did not cause the abandonment of the old dark-on-light painted technique and its decorative motives. Contenau and Ghirshman (*op. cit.*, p. 9) noted this phenomenon. It indicates, not so much that the three levels are nearly contemporary, but that N.W. Persia was a backward district where inventiveness in the matter of decoration and technique was not a marked characteristic of the potters. That the shapes changed while the decoration and technique remained in part constant is not to be wondered at, for in pot-making shape is usually flexible and subjective.

What of the date of this Nehavand pottery, and of its relation to wares from other Asiatic sites?

There is, of course, a general resemblance of the dark-on-light ware, with its linear and animal motives, to the Susan styles and their congeners, and Contenau and Ghirshman (*op. cit.*, p. 11) have claimed that level C is an overlap of Susa I and II styles, while levels B and A represent the developed Susa II. It would seem that there is some justification for this claim, though that is not to say that the contemporaneity of the respective Susan and Tepe Giyan levels is to be conceded. Before final judgment is passed, the full report of the Tepe Giyan excavations must lie before us.

At the same time grey and red hand-made or wheel-made burnished pottery like nos. 14–16 is well known in one form or other all over Mesopotamia and Persia, but as it occurs at different periods on different sites, its occurrence is a very unstable basis for arguments about chronology or kinship.

One site, however, that of Tepe Hissar (Damghan) near Teheran,[1] provides important parallels to our latest level, Tepe Giyan C, in its own latest level Hissar III, while at the same time it provides a parallel case of dark-on-light technique lasting on through its three levels, Hissar I–III, though invaded by the grey-ware techniques.

In Hissar I—the lowest stratum—[2] the typical fabric is a wheel-made ware with dark-on-light decoration of linear motives and conventionalised animals, akin in technique though not in shape or design to Tepe Giyan dark-on-light ware. In Hissar II [3] painted ware begins to be ousted by wheel-made grey ware, usually plain, but occasionally decorated with incisions or added knobs. Finally, in Hissar III,[4] though there are a few painted survivals, the chief fabric is a hand-made grey ware, plain, incised, or burnished. In this stratum parallels occur to the tripod-pot (no. 9) of Tepe Giyan B, and to the concave-sided beaker (no. 10) and the spouted pot (no. 15) of Tepe Giyan C.[5] A similar spout to that of no. 15 also occurs on silver and stone vessels of Hissar III.[6]

[1] E. Schmidt, "Tepe Hissar Excavations, 1931," *Museum Journal* XXIII (1933), pp. 322 ff.

[2] *Op. cit.*, pp. 344 ff.

[3] *Op. cit.*, pp. 367 ff.

[4] *Op. cit.*, pp. 392 ff.

[5] For examples of all three, see *op. cit.*, pl. cxvi.

[6] *Op. cit.*, pls. cxxv and cxxxix.

Thus a body of evidence has been accumulating which suggests an equation in time of Hissar III with Tepe Giyan C. The beads corroborate this. The only distinctive shape of bead common to two out of our three strings is the segmented cylinder. At Hissar a string containing many of these beads occurred in level III,[1] while such beads do not seem to have been found in earlier levels. Knowing that segmented beads have occurred in Mesopotamia as early as the Jemdet Nasr period,[2] we should hesitate to equate Hissar III and Tepe Giyan C on this evidence alone, but as it is borne out by pot-shapes and technique, we have surer ground for our judgment.

Can we go further and attempt to give an absolute date to the Tepe Giyan series ?

The end of Hissar III was dated to *c.* 1500 B.C. by the excavators,[3] wholly because of the absence of iron in that stratum. The argument is slender. Contenau and Ghirshman [4] had firmer reasons for dating the latest Tepe Giyan level to just before 1000 B.C., because of the types of iron and bronze weapons found in the tombs. It is possible, therefore, that Hissar III should be brought down to the second half of the second millennium B.C., and that the absence of iron in it is merely fortuitous. But Contenau and Ghirshman have as yet made no attempt to give absolute dates to their earlier levels. Comparative evidence of well-dated material from other sites is wholly lacking, and in its absence any attempt at chronological exactitude can only be the merest guesswork.

D. B. HARDEN.

[1] *Op. cit.*, p. 438, pl. cxlv

[2] For one from Jemdet Nasr itself, see Mackay, *Jemdet Nasr* (*Field Museum Anthrop. Memoirs*, I, 3), pl. lxxii, 5. ; now no. 1926. 460 in the Ashmolean.

[3] *Op. cit.*, p. 390.

[4] *Op. cit.*, p. 10.

OSIRID STATUE OF AKHENATEN (on cover).

This remarkable Osirid statue of Akhenaten is one of the series recently discovered in the early temple of that monarch at Karnak. It is here reproduced by kind permission of the authorities of the Cairo Museum at the request of Mr. G. D. Hornblower, to whom acknowledgment is made.—(EDITORS.)

THE BARNDOOR FOWL IN EGYPTIAN ART.

THE spoon in the accompanying figure is of wood ; its length is $8\frac{1}{2}$ inches, the length of the bowl $3\frac{3}{4}$, and its breadth $1\frac{3}{4}$ inches. It was procured many years ago from a Cairo dealer and its age and provenance are unknown ; the bowl is delicately carved in a shapely oval as in known specimens dating from the New Kingdom. Many ancient spoons have survived, some of great beauty and extremely ingenious design, such as those in the British Museum which have been published by Miss Madeleine Frédéricq in the *Journal of Egyptian Archaeology*, XIII, 7, but the present example is remarkable for a rare feature, in the barndoor fowls carved at each end of the handle. Their identity is clearly shown by the port of the tail in the bird at the juncture of the handle with the bowl ; the upright carriage is characteristic of the domesticated strain, for the wild jungle-fowl from which the race has descended has a drooping tail (A. Newton in the *Enc. Brit.*, 11th ed., X, 760).

The bird which usually decorates the finials of spoon-handles is the duck ; the barndoor fowl here shown appears to be unique. The species was not introduced into Egypt till certainly the XVIIIth dynasty, if not later, as Dr. Howard Carter has shown in the *Journ. of Egyptian Archaeology*, IX, 1–4, where he relates in detail its story in the ancient Near East. Its late entry into Egypt accounts for its general absence as a decorative element in the country's art : the conventions for pictures of ordinary life were firmly fixed under the Old Kingdom and were strictly maintained for similar scenes in later periods by the religious conservatism so strong in Egypt. Therefore, though in Babylon, as Mr. Sidney Smith relates—quoted by Dr. Howard Carter in the above-mentioned article—the domesticated jungle-fowl had some religious significance,[1] in Egypt it was not admitted even as a decorative element in art, unlike the duck or the goose which figure largely in the revered works of the Old Kingdom and were accordingly admitted freely into later art.

G. D. HORNBLOWER.

[1] In India, in the early part of the 3rd millenium B.C., it is very probable, though not yet certain, that the jungle-fowl was domesticated ; *see* E. Mackay, *Mohenjo-daro and the Indus Civilisation*, pp. 323, 392, 662 and 669.

THE STATISTICAL TREATMENT OF ANCIENT WEIGHTS.

1. In the study of the systems of weights used by the peoples of antiquity investigators are at once confronted with the difficulty that the values found are extremely variable.

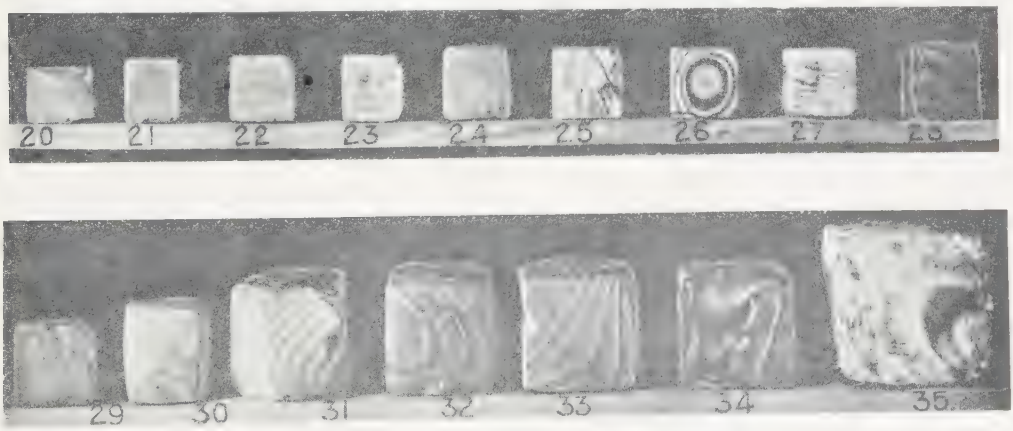
One cause of this is that the weights may no longer have their original values; there are the wear and tear of use, accidental damage and the loss due to chemical corrosion.

The change due to the second cause is at once apparent to the eye. Where the original form was geometrical, the original weight may sometimes be recalculated. The change due to the third is usually inappreciable when the material used is a hard stone, and fortunately this material was used in the majority of cases. Crystals occur in perfect condition in rocks millions of years old; the few thousands of years archaeologists have to deal with produce a negligible effect where the conditions are reasonably favourable.

Losses due to wear and tear become most appreciable for the smaller weights. Taking the cubical chert weights common in the Indus system, a wear of the edges equivalent to a bevel of ·5 mm., not very noticeable, in the case of a cube of 2 cm. side would not affect the accuracy by ·5 per cent., but would, for a cube of 1 cm., weighing between 2 and 3 grammes, produce an error of about 1·5 per cent.—a quite important amount, for the greatest permissible error should not exceed ·5 per cent.

In recording specimens, it is most desirable to indicate the condition of the weights in such a manner that weights outside the above-mentioned limits of accuracy may be set aside. It cannot be said that this precaution has been very generally practised. In many cases, also, the observer has not made the weighing to the above degree of accuracy, and the record is only in round numbers. This makes it difficult to decide whether to accept or reject an observation in integral figures, particularly when ciphers have been added, giving a false appearance of precision although the frequency of recurrence of that particular value is far in excess of probability.

2. In consequence of the great variability of the weights found, there has been a tendency among metrologists to select as standard some particular weight



CHERT WEIGHTS FROM MOHENJO-DARO. 1·1 approx
(By Courtesy of Arthur Probsthain.)

which is especially well finished; it has perhaps been found in a temple, and bears an authoritative inscription. The controversies which have arisen are witness to the unsatisfactory nature of this method. The artistic finish and perfection of form of a weight are no criterion of its accuracy as a standard. This is well exemplified in the series of weights from Erech which form a conspicuous exhibit in the Babylonian Gallery in the British Museum, and which have been studied by M. Thureau-Dangin.[1] No better finished weights have

SUMERIAN DUCK WEIGHTS. 1/5 approx

(By Courtesy of the Trustees of the British Museum.)

been excavated. They are all more or less from the same locality and of the same period. The values of a series in grammes are: 24·70, 25·57, 40·40, 40·49, [illegible], 81·50, [illegible], 83·70, 163·90, 196·0. The corresponding values of the shekel derived therefrom are: 8·08, 8·10, 8·11, 8·19, 8·195, 8·23, 8·267, 8·30, 8·37, 8·53.

Various proposals for the best method of grouping this series have been

[1] *Rev. d'Ass.*, 1927, vol. xxiv., p. 69.

made, but, whatever the suggestions, it is clear that there is a wide latitude of variation. The same may be said of any collection of ancient weights. It is evident that, even if these early dealers attached importance to accuracy, they were incapable of attaining it. More time was spent on obtaining perfection of form than of dimensions. Art took precedence of science in those days.

Under such circumstances, it is a fruitless task to search for some particular weight which can be accepted as a general standard. The most we can hope to discover is at what values some considerable body of weight-makers were aiming. A method of investigation is therefore needed which, as far as possible, frees us from the necessity of making personal judgments of preference for one weight rather than another.

3. It is obvious that the balances of the weightmakers were rough, so that their copies were only approximations to the standard they used. If these standards were copies of other standards, and the process of copying were sufficiently repeated, in time the range of variation would be very considerable. The variations, when not deliberate, would be fortuitous and the result of the addition of many errors, positive and negative values being equally likely. If the individual errors were small, the probability of an error of given amount will follow the mathematical Law of Errors, which states that the Probability y of an error equal to x is given by the equation $y = ke^{-h^2x^2}$, where e is the base of Naperian logarithms, k is the value of the maximum ordinate, and h is a constant called the Measure of Precision. The more accurate the collection of weights, the larger is h and the sharper the curve.

To apply this law in practice with any hope of accuracy, large numbers of specimens are essential, otherwise the theoretical shape of the resulting curve is masked by accidental groupings. Unless the numbers run to hundreds, the method can tell us little, but when such numbers are available, we may place considerable reliance upon any conclusions which may be drawn.

4. In any large collection of weights, of course certain specimens will be by intention multiples of others belonging to the same system. The value of the multiple is generally quite obvious, but owing to the gross inaccuracy of some of the specimens, there will be borderline cases, especially amongst the smaller weights. Large numbers, however, reduce the importance of an error due to a wrong attribution.

If the variation of the weights is fortuitous, the mean deviation of the specimens intended to have the same value will be proportional to the mean value. If also the balances used give a uniform percentage accuracy throughout their range, and we plot a curve showing the number of specimens within a given range of value as ordinate and the logarithm of the value as abscissa for the whole range of the weights of a system, we should get a number of peaks of the same degree of sharpness.

In fig. 1 are plotted all the weights found belonging to the Indus system up to a value of 550 gm. These weights were divided into a series of steps for which the logarithms of the values are within a range of ·025. The ordinate is the number of specimens within this range corresponding to an abscissa which is the logarithm of the weight of the middle point of the range. The range extends to about 3 per cent. on either side of the weight of the middle point.

Most of the peaks in fig. 1 are very nearly equally sharp, except, as might be expected, for the smaller groups, where the balances have shown themselves less accurate. In the figure the ratios adopted have been marked.

5. If we divide the value of each specimen by its ratio to the standard

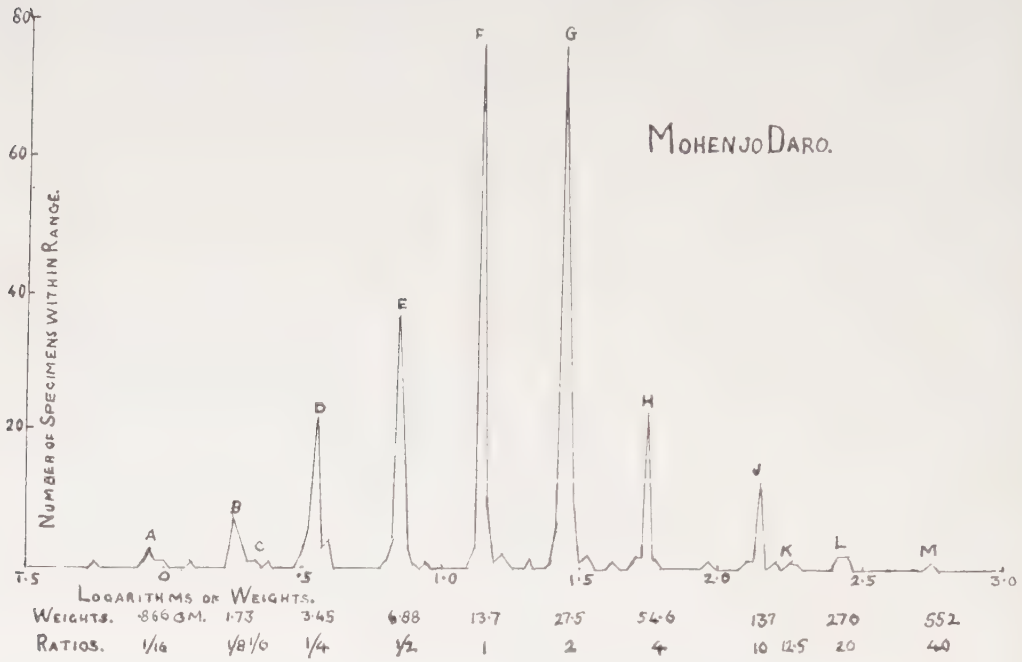


FIG. 1. FREQUENCY OF WEIGHTS IN THE INDUS SYSTEM.

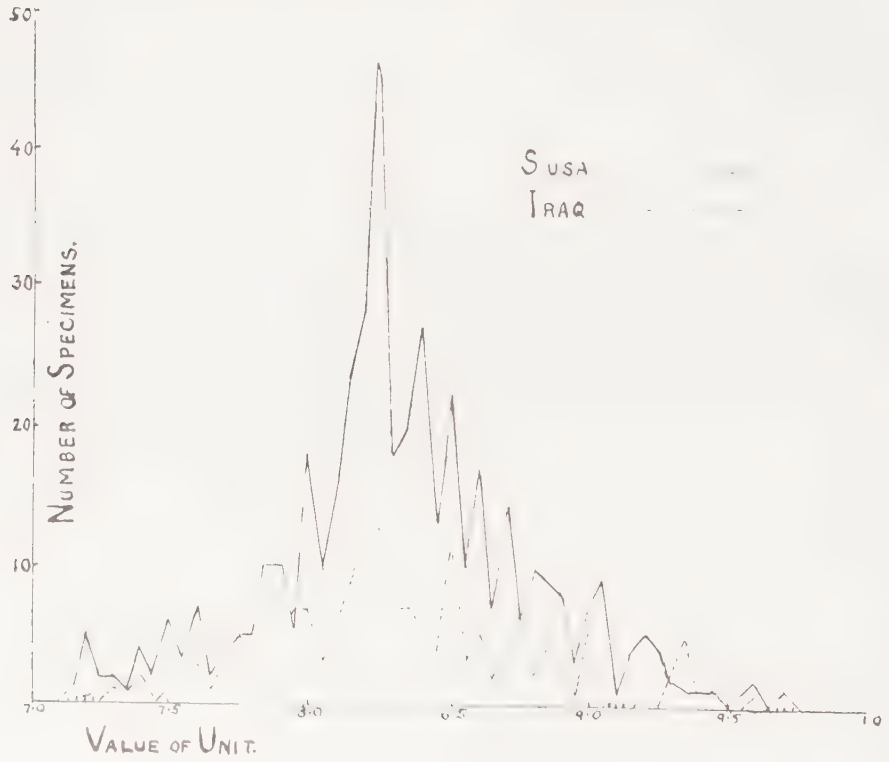


FIG. 2. DISTRIBUTION OF VALUES OF THE UNIT AT SUSA AND IRAQ.

adopted, we get the value of that unit derived from this specimen; these show considerable variation. We may plot a curve with the mean of a certain small range of values of the unit as abscissa and the number of specimens within that range as ordinate. Fig. 2 shows such a curve for the weights of Susa. If there is only one standard and the variations are fortuitous, then for an infinite number of specimens, the resulting curve will be the Probability Curve. If some of the weights conform to one standard and others to another, the ordinates of the curve will be the sum of the ordinates of two probability curves, one for each standard. Figures 3 and 4 have been obtained in this way. The number of specimens conforming to a given standard will be proportional to the area of the corresponding curve.

With a finite number of specimens, chance deviations will occur. The amount of the deviation will be according to the degree of inaccuracy of the system and proportionately most marked for small values of the ordinates. Where only a very small percentage of the total weights appear to conform to a certain standard, the chances are that they are merely an accidental grouping, which would disappear with an increase of data.

6. The investigation of the weights of the Indus system, found mainly at Mohenjo-daro in Sind, but also at Harappā in the Punjāb, some 500 miles to the north, has revealed a system in which it is obvious that all but a very few specimens conformed to a single standard.

Fig. 1 records without exception all the specimens up to 550 gm. in sufficiently good condition to be taken into account. The specimens range actually up to 11,467 gm., but as only 10 have weights above 550 gm., and these are not exceptional, it is unnecessary to extend the diagram. The extremely sharp maxima show that the system has an accuracy far in advance of what is to be found elsewhere at so early a period, which is probably between 3000 and 2500 B.C., or for that matter long after. The maximum at F, corresponding to a mean weight of 13·71 gm. (211·57 gr.), may be conveniently taken as the unit. The maxima at A, B, D, E, F, G, H, and J correspond to ratios to the unit of $\frac{1}{16}$, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, 4 and 10 respectively. The number of specimens corresponding to the maxima at K, L, and M are small, but there can be no doubt that the maxima have ratios 12·5 (200 A), 20 and 40. The higher ratios not shown which occur are 100, 200, 400, 500, and 800. The reality of the C group with a ratio of $\frac{1}{6}$ is more doubtful. The investigation of the first data provided gave 2 specimens separated from Group B best accounted for by this ratio. Although subsequently the number of specimens has been more than doubled and Group B has spread upwards, Group C has not increased. Its reality must be considered provisional.

Accepting these ratios, values of the unit were obtained by dividing each weight by its ratio. A table may be constructed showing the number of specimens conforming to a unit within a range of ·025 gm. on each side of the mean value of the range. We get a series of steps of ·05 gm. In fig. 3 the results are plotted as small circles on a diagram in which the mean unit of the range is abscissa and the number of specimens in the range is ordinate. The results are irregular, though not nearly so much as in fig. 4, which gives similarly the results from Sumer. To compensate for the number of specimens not being infinite, a smoothing process has been adopted. If a, b, and c are successive values of the number of specimens, we replace b by the formula $(a+2b+c)/4$. The results are plotted as crosses in fig. 3. 12 results out of 360 below 12·75 and 13 above 15·0 have been omitted from consideration. These show no tendency to form groups, but are irregularly scattered.

By a process of trial and error, a number of probability curves have been found of which the sum of the ordinates gives a curve (the continuous curve of the figure) which the figure shows fits the smoothed observations as well as can be expected.

The data of these probability curves (fig. 3) are as follows :—

C (–.–.–.) Mean value=13·625 gm. (210·2 gr.).
Maximum ordinate $(k)=12$.
Measure of precision $(h)=2·875$.

F (–..–..) Mean value=13·625 gm. (210·2 gr.). $k=28$ $h=8·865$.

A (.....) Mean value=13·95 gm. (215·2 gr.). $k=3·75$ $h=8·316$.

B (– – – –) Mean value=14·375 gm. (221·7 gr.). $k=4$ $h=5·364$.

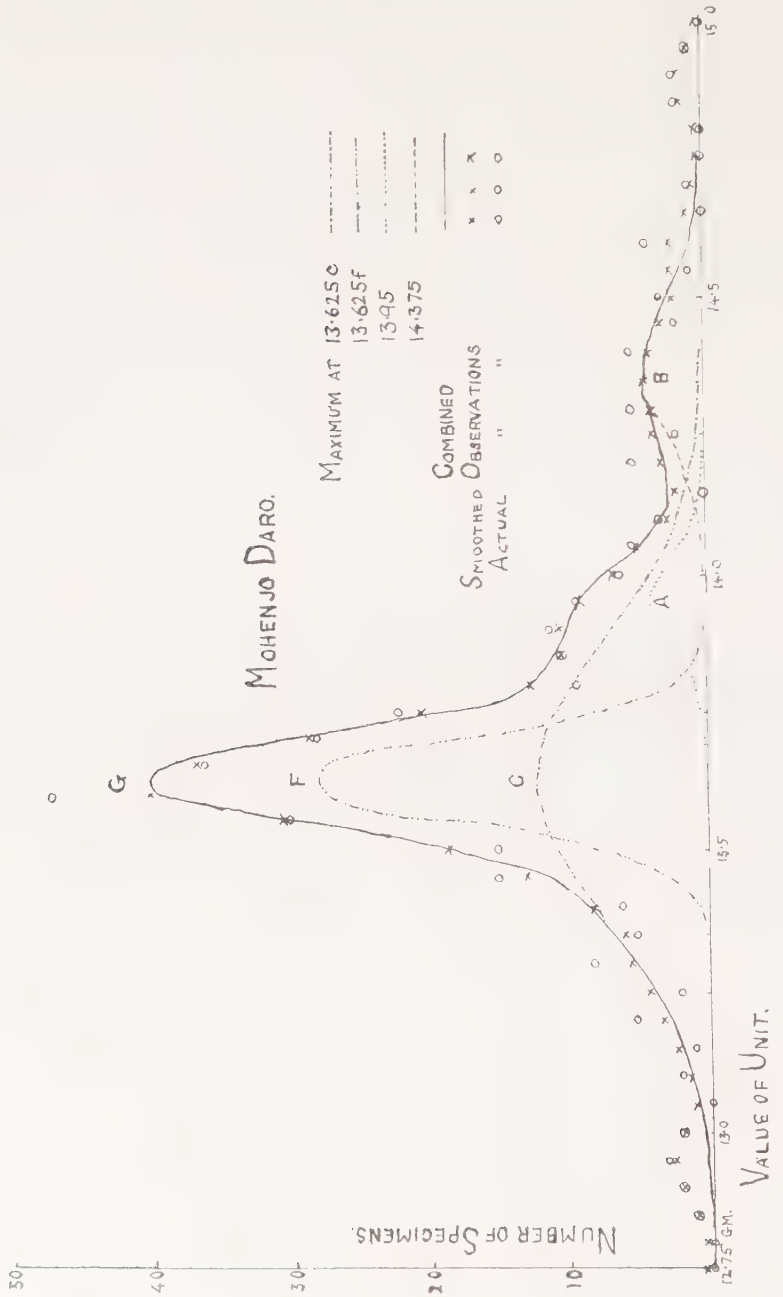


Fig. 3. Distribution of Unit in the Indus system.

The ordinates of the continuous curve D are obtained by adding the values of the calculated ordinates of the above four curves.

Where the value of the ordinate is small, its uncertainty is proportionally large, so that the form of the curve above 14·1 is doubtful. The position of the maximum given as at 14·375 is therefore somewhat uncertain and may be a trifle higher.

The number of specimens corresponding to each curve is proportional to the area of the curve. As the observations have been smoothed, however, the percentages found must be taken as rough approximations only. We arrive, therefore, at the following conclusions: in the Indus system, the great majority (86 per cent.) of the specimens conform to a standard of 13·625 gm. These can be divided into an accurate group with 35 per cent., and one much less so with 49 per cent. There are a few (5 per cent. conforming to a standard of 13·95 gm., and another small (9 per cent.) and inaccurate group with a standard of about 14·375 gm. These results may be considered to confirm amply the hypothesis that in the Indus system the distribution of the values of the weights is due to fortuitous variation about a few standards and so is amenable to mathematical treatment.

7. Let us now apply the method to the consideration of weights coming within the area under Sumerian influence. Unfortunately here the data available are not so satisfactory. There appears to be a great lack of uniformity in the accuracy of the determination of the weights and in the record of their condition. The frequency of round numbers is far beyond what probability would assign, so that the invidious task of censoring them has to be undertaken. Again, whereas in India there is a reasonable assurance that no specimen has been accepted of which the uncertainty of the weight exceeds 0·5 per cent., no such assurance is possible with the Sumerian data.

Moreover, except in the case of Susa, the data available is comparatively meagre, insufficient for statistical treatment. The question of the inclusion of Susa with Sumer proper was decided by a comparison of the unsmoothed curve of the distribution of the unit for Susa on the one hand, and the data obtained from all places within the area of present-day Iraq from Nineveh to Ur. The comparison is plotted in fig. 2. The general resemblance of the two curves shows that there is no reason for excluding Susa from the others. It has therefore been included.

The data for places using the Sumerian system have all been treated in the manner described above and the results are plotted in fig. 4.

The continuous curve G is obtained by summing the ordinates of the following six probability curves:

A (—..—..)	Mean value=7·575 gm.	(116·9 gr.).		
		Maximum ordinate (k)=6.		
		Measure of precision (h)=3·700.		
C (.....)	Mean value=8·225 gm.	(126·9 gr.).	k=25·6	h=2·827.
F (–..–..–)	Mean value=8·225 gm.	(126·9 gr.).	k=16·0	h=13·60.
B (—.—.—)	Mean value=8·45 gm.	(130·4 gr.).	k=7	h=8·254.
D (– – – –)	Mean value=8·775 gm.	(135·4 gr.).	k=11	h=3·146.
E (–.–.–.–.)	Mean value=9·25 gm.	(142·7 gr.).	k=4·5	h=3·653.

The observed number of specimens for each value of the unit, marked in the figure by small circles, is smoothed as before by the formula $(a+2b+c)/4$. These results are marked as crosses. The agreement between the smoothed observed values and the theoretical is satisfactory, as the figure shows.

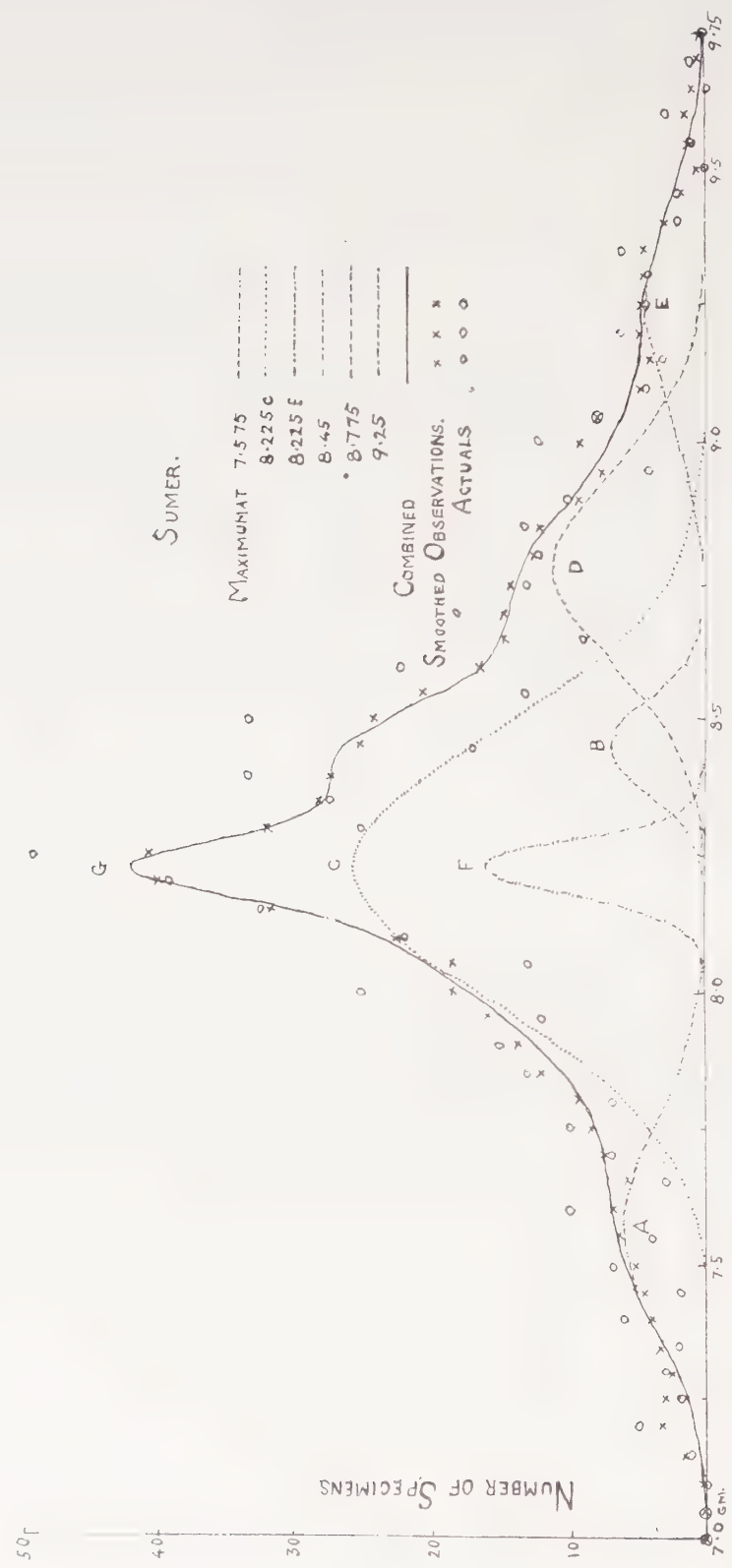


FIG. 4. DISTRIBUTION OF UNIT IN THE SUMERIAN SYSTEM.

We come, therefore, to the following conclusions, which, however, must be considered provisional until a larger body of more uniform data is available. The bulk of the weights (54 per cent.) form a very inaccurate series with standard 8·225 gm. Another 7 per cent. conform to the same standard with a high degree of accuracy; 10 per cent. give an inaccurate series with standard 7·575 gm.; 5 per cent. an accurate series with standard 8·45 gm.; 17 per cent. an inaccurate series with standard 8·775 gm.; and 7 per cent. an inaccurate series with standard 9·25 gm.

These conclusions are arrived at by consideration of weight of numbers, individual errors in attribution will be lost in the total result.

The standards at 8·225 and 8·45 gm., for which the corresponding *minas* are 493·5 and 507·0 gm., are the two values of the shekel generally recognised though with slightly different values. Col. Belaiew suggests that there are three *minas*: $D1=491{\cdot}14$ gm., $D2=502{\cdot}7$ gm., and $D3=511{\cdot}20$ gm. Whilst a more discriminating selection of the specimens utilised might lead to some alteration in the positions of the maxima, the form of the curve lends no support to this division into three.

Of the other standards present, that of 7·575 gm. comes within the range of the Egyptian *peyem*. The analysis will not distinguish between this attribution and the *su*, regarded by Col. Belaiew as a unit of value 30·71 gm., equal to 4 *peyems*. The only evidence to distinguish between these two standards would be the identification marks found on a few weights. The following are relevant: 232·5 gm. marked "half *mina* silver," 75·90 gm. with 10 strokes, 38 gm. with 6 strokes, 7·73 gm. with 2 strokes, 7·49 gm. with the same number, ·95 gm. marked $22\frac{1}{2}$ *se*. The first two clearly point to a standard of about 7·5 gm., the last, assuming the shekel to be equal to 180 *se*, gives the same standard. The 6 strokes of the weight 38 gm. might mean a unit of 6·33, but more probably it implies one sixth of a half *mina*, corresponding to a unit of 7·5 gm. The two weights with two strokes are ambiguous, but in any case do not point to a standard of 30·7 gm.

The standard at 8·775 gm., corresponding to a *mina* of 526·5 gm., comes within the range of what was later the *stater*, but found in Egypt contemporaneously.

Lastly, we have the maximum at 9·25 gm. Only two specimens in the neighbourhood of that standard are marked: 184·35 gm. and 2·30 gm., each marked with four strokes. We must assume that the former is four times the 5 shekel weight and the latter a quarter of a shekel. This is evidence that there is an actual standard in that neighbourhood.

We can now consider the attribution by Col. Belaiew of 40 out of 426 specimens, found since 1926 at Susa, to the Indus System.[1]

The frequencies of occurrence of the different groups as assigned by Col. Belaiew are quite different from those found in India itself. Giving the latter in brackets after Belaiew's numbers, we get the following figures: A 2 (5), B 5 (13), C 11 (2), D 7 (31), E 3 (45), F 1 (91), G 0 (94), H 0 (23), J 0 (11), K 1 (1), 2 K 1 (0), 3 K 1 (0), L 2 (4), M 1 (1), N 1 (3), V (ratio 200) 1 (3), W (ratio 400) 1 (1), X (ratio 500) 0 (1), Y (ratio 800) 0 (2).

The most common group at Susa is C with 11 specimens, and only 2 out of 360 have been found at Mohenjo-daro; the groups 2 K and 3 K, which Col.

[1] *Mémoires de la Mission archéologique de Perse.* Vol. XXV, p. 134. 1934.

Belaiew assumes, are not found at the type site. On the other hand, of groups F and G, which account for half of all the specimens found in India, only one representative is found at Susa.

The mean value of these 40 weights is 13·52 gm., which coincides neither with the mean value of the Indian weights (13·71), nor with any of the standards found there : 13·62, 13·95 and 14·37.

The mean deviation of the Susian unit is ·40, which shows there is no tendency towards a standard value, but that the units are scattered irregularly between the limits 14·94 and 12·45.

If the Indus system is present at Susa, we should expect to find in the curve of fig. 4 a maximum at 4/6ths of 13·625 gm., *i.e.*, at 9·1 gm. Actually this is near a minimum. It is true that the differences between the theoretical and actual values at 9·0 and 9·05 are larger than elsewhere, but this may be partly accounted for by the tendency for observations to be recorded in round numbers. We may, however, consider in detail the 27 specimens in Sumer for which the units assigned lie between 8·98 and 9·15. Five of these are given the value 4·50 and another 2·25 gm., round figures. Four bear marks indicative of value : (1) 35·90 gm. marked 2 shekels (this is from Nineveh and the unit is the Assyrian double shekel) ; (2) 538 gm. marked one *mina* ; (3) 540 gm. with 6 strokes indicating 6 times 10 shekels ; (4) 2·25 gm. with 4 strokes indicating one quarter of a shekel.

The evidence is entirely in favour of supposing that such agreements as occur are due to chance coincidence.

The conclusions arrived at in respect to the standards prevalent in Sumer would be more decisive if there were greater assurance that all weights had been recorded correctly to within one half per cent., and that the data all belonged to one locality and period. The only single place for which there is sufficient data is Susa. Considering the weights at that place alone, the curve is more irregular, but the only noticeable difference from the form of fig. 4 is that the maximum at 8·775 is displaced slightly, 8·825 giving a better result.

8. The conclusions given above may be summarised as follows :

1. The only standards which can be distinguished are those a considerable group of weightmakers are aiming at. Neither the artistic finish nor the fact that the specimen bears an authoritative inscription can be accepted as an indication of the accuracy of the specimen.

2. The variation in ancient weights aiming at a particular standard may be of large range and conforms to the Law of Errors.

3. The determination of the constants of the equation of that law requires a large number of specimens, a matter of hundreds. The theoretical curve is then found to approximate closely to the observations.

4. The weighings need to be made to a uniform standard of accuracy, and the condition of the specimen definitely recorded, so that we may feel assured that we know the original weight to at least one half per cent. ; otherwise there will be a tendency for certain values to be favoured.

5. The maxima are determined from observations of a large number of weights, so that errors of judgment of individual specimens have a very minor effect upon the conclusions.

6. The coincidence in value of the weight of an individual specimen with the standard of another country cannot be taken by itself as evidence that the particular specimen is an example of that standard.

7. In particular, the coincidence in weight of certain specimens from Susa with weights belonging to the Indus system is not sufficiently marked to make it probable that they may be attributed to that system.

8. In the Indus system, the great majority conform to one standard (13·625 gm. or 210·2 gr.), and may be divided into two grades, one very accurate, one much less so. A small percentage conform to a standard of 13·95 gm. (215·2 gr.) and another very inaccurately to a standard of 14·375 gm. (221·7 gr.).

9. Considering all the weights within the Sumerian orbit, we find a similar state of things: a majority divided into two grades of differing accuracy conforming to the standard 8·225 gm. (126·9 gr.), a minority to three other slightly higher standards (8·45, 8·775 and 9·25 gm. or 130·4, 135·4 and 142·7 gr. respectively, the last being very inaccurate), and one to a lower standard, 7·575 gm. (116·9 gr.). The accuracy of these weights is distinctly less than we find in the Indus system.

No greatly different conclusions would be obtained if we confined ourselves to the specimens from Susa separately.

A. S. Hemmy.

(*See also the forthcoming Supplement to this number.*)

ARCHAEOLOGICAL EXPEDITIONS TO THE NEAR EAST AND ASIA.

SEASON 1935–6.

In recent years the contacts and connections between the ancient civilisations have been recognised to be of paramount importance. Exact knowledge as to the excavations actually in progress, or contemplated for the near future, is in consequence an increasingly felt necessity; but information on this subject is often difficult to obtain. The editors therefore hope that this list will be of service to readers of this Journal, though it is unavoidably incomplete and it has not been possible to verify certain details. At the same time they wish to thank the authorities of the various countries who have so kindly supplied the information from which it has mainly been compiled.

SITE.	NAME OF EXPEDITION.	FIELD DIRECTOR.
EGYPT.		
1. (*a*) Valley of the Tombs of the Queens. (*b*) Gebelein.	Royal Museum, Turin .	Prof. G. Farina.
2. Kom Achmounein .	Pelizaeus Museum, Hildesheim.	Prof. Roeder.
3. Medinet Habu . .	Oriental Institute, Chicago .	Prof. H. Nelson.
4. (*a*) Abu Ghalib . . (*b*) Maassarah.	Egyptian Museum, Stockholm.	Prof. H. Larsen.
5. Antinoë (Sheikh-Ebada)	Society for Papyrological Research, Italy.	Senator Vitelli.
6. Pyramids of Gizeh .	Harvard-Boston Universities	Dr. G. Reisner.
7. (*a*) Pyramids of Gizeh (*b*) Tounah el-Gebel. (*c*) Meadi.	Faculty of Arts of the Egyptian University.	Prof. Selim Hassan. S. Gabra. Prof. Menghin.

SITE.	NAME OF EXPEDITION.	FIELD DIRECTOR.
8. (*a*) Great Pyramid (*b*) Gebel Merimda.	Academy of Sciences, Vienna	Prof. H. Junker.
9. Tell el-Amarna	Egypt Exploration Society	J. D. S. Pendlebury.
10. Armant	Robert Mond Expedition of the Egypt Exploration Society.	O. H. Myers.
11. (*a*) Medamoud (*b*) Toud.	Louvre, Paris	M. Ch. Boreux.
12. (*a*) Khargeh Oasis (*b*) Baharieh.	Royal Anthropological Institute. (No excavations this season.)	Miss G. Caton-Thompson.
13. Kom Om el-Boreigat	Italian Archaeological Mission.	Dr. G. Bagnani.
14. (*a*) Assassif, Thebes (*b*) Hierakonpolis.	Metropolitan Museum of Art, New York.	A. Lansing.
15. Kom Medinet-Madi	University of Milan	Prof. Vogliano.
16. Sinai, Rafah to El-Arish.	British School of Archaeology in Egypt.	Prof. Sir Flinders Petrie.
17. Deir el-Medineh, Thebes	French Institute of Oriental Archaeology.	M. P. Jouguet.
18. Tanis	Ministry of Public Instruction, France.	M. P. Montet.
NUBIA.		
Kawa (Gem-Aton), Dongola Province.	Oxford University	L. P. Kirwan.
PALESTINE.		
1. Megiddo (Tell el-Mutasallim).	Oriental Institute, Chicago	Dr. Gordon Loud.
2. Et-Tell	Louvre, Paris	Mme Krause-Marquet.
3. Jisr Benat Yakub	Hebrew University, Jerusalem.	M. Stekelis.
4. Athlit	British School of Archaeology in Jerusalem.	Miss D. A. E. Garrod.
5. Esbeita	Colt Expedition of the British School of Archaeology in Jerusalem.	H. D. Colt.
6. Jebel Kafzeh, near Nazareth.	Institut de Paléontologie Humaine, Paris.	M. R. Neuville.
7. Bethlehem	Wellcome Archaeological Research Expedition to the Near East.	Miss E. W. Gardner.
8. Tell Duweir	..	J. L. Starkey.
9. Tell Keisan	Neilson Expedition of the Institute of Archaeology, Liverpool.	Prof. J. Garstang.
10. Jericho	Jericho Expedition of the Institute of Archaeology, Liverpool.	Prof. J. Garstang.

SITE.	NAME OF EXPEDITION.	FIELD DIRECTOR.
11. Tell el-Ajjul . .	British School of Archaeology in Egypt.	Dr. M. A. Murray.
TRANSJORDANIA.		
(?), Dolmen field . .	British School of Archaeology in Iraq.	P. L. O. Guy.
SYRIA.		
1. Ras Shamra, Minet el-beida.	Louvre, Paris . . .	Prof. C. Schaeffer.
2. Mari (Tell Hariri) .	Louvre, Paris . . .	M. A. Parrot.
3. Dura (Doura-Europos)	Yale University, U.S.A. .	M. Brown.
4. Apamea . . .	Royal Museums of Art and History, Brussels.	M. F. Mayence.
5. Hama (Hamath) .	Ny Carlsberg Glyptotek, Copenhagen.	H. Ingholt.
6. Chatal Huyuk, Tell Jedeideh, Tell Teinat.	Oriental Institute, Chicago .	Dr. C. W. MacEwan.
7. Antioch and its vicinity	Baltimore Museum of Art, National Museums of France, Princeton University, Worcester Art Museum.	M. Campbell.
8. Tell Chagar Bazar .	British Museum and British School of Archaeology in Iraq.	M. E. L. Mallowan.
9. Bosra . . .	British School of Archaeology in Jerusalem.	J. W. Crowfoot.
10. Tells near Antioch .	British Museum . .	Sir C. L. Woolley.
11. Byblos . . .	Service des Antiquités .	M. Dunand.
12. Palmyra . .	Service des Antiquités .	M. H. Seyrig.
13. St. Siméon le Petit .	Académie des Inscriptions et Belles-Lettres, France, and Antioch Museum.	R. P. Mercerian.
14. Palmyra District .	Académie des Inscriptions et Belles-Lettres, France.	M. D. Schlumberger.
TURKEY.		
Istanbul (Ancient Palace of the Emperors).	David Russell Expedition of St. Andrews University.	Prof. G. H. Baxter.
U.S.S.R.		
Altai Mts. (burial grounds)	State Museum of History, Moscow.	
Kostenki, Voronezh Province.		Prof. N. Y. Efimenko.
(Other information promised, but not to hand at time of going to press.)		
IRAQ.		
1. Tepe Gawra . .	Museum of University of Pennsylvania, American School of Oriental Research.	C. Bache.

SITE.	NAME OF EXPEDITION.	FIELD DIRECTOR.
2. Tell Asmar, Khafaje, Ishchali.	Oriental Institute, Chicago .	Dr. H. Frankfort.
3. Warka . . .	Die Notgemeinschaft der Deutschen Wissenschaft.	Dr. Nöldeke.
4. Kasr Shemamok .	Missione Archaeologica Italiana, (?)	Professor G. Furlani.
IRAN.		
1. Persepolis (Takht-e Djamshid and Istakhr).	Oriental Institute, Chicago .	Dr. E. Schmidt.
2. Raiy (Raghès) . .	University of Philadelphia, Boston Museum of Fine Arts.	Dr. E. Schmidt.
3. Susa . . .	French Government . .	R. de Mecquenem.
4. Shapur	Louvre, Paris . . .	R. Ghirshman.
5. Archaeological research	between Shiraz and Kurdistan :	Sir Aurel Stein.
6. Luristan (Valley of Rumishgan).	American Institute for Persian Art and Archaeology.	Dr. E. Schmidt.
7. Nishapur . . .	Metropolitan Museum of New York.	J. Upton.
INDIA.		
Chanhu-daro, Indus valley (Sind).	American School of Indic and Iranian Studies, Boston Museum of Fine Arts.	Dr. E. Mackay.
SIAM.		
?	Gackwar of Baroda Greater India Research Expedition.	Dr. Quaritch Wales.
CAMBODIA.		
No information.		
DUTCH EAST INDIES.		
None.		
CHINA.		
Hanchow . . .	West China Border Research Society, West China Union University.	
Various sites in Honan and Shantung.	Academia Sinica, Nanking .	Dr. Lichih.
JAPAN.		
No information.		

THE FUTURE OF ARCHAEOLOGY.

The prospect of learning the history of man from his works, which seemed so bright in anticipation a generation ago, has been clouded over owing to various causes.

Archaeology ranks as a science, but it has as yet neither the terminology nor the classification needed in sciences, nor the body of type specimens which are essential for scientific work. Botany, for instance, needed the labour of Linnaeus and the great herbaria of Kew and other centres before it could deal with Nature: Mineralogy needed the chemical order, and the mathematics and geometry of Haüy and his followers, beside the great type collections: Entomology has an immense range, and can only be advanced with the aid of great type collections for comparison: Chemistry was a tangle until the organised atomic system of Dalton. In other branches of science the need is similar, a rational and complete book classification and type collections; without these no science can exist.

In Archaeology there is as yet no generally accepted scheme for the scientific registration of the works of man. Many a student (if he publishes at all) gives drawings which have no common register with any other work. Publications are a chaos of repetitions, and hundreds of plates must be searched to find comparisons with fresh discoveries. Corpus lists have been organised and published for Egypt and for Palestine, but they are neglected by the compilers of confusion. Even in the most favoured lands and periods there is no table of all the types of pottery of the Greek or Roman civilisations. Not one of the many students of Classical Archaeology will spend a month at Pompeii and Naples, drawing the pottery of the best defined age. Yet till a system is laid down for the dated material—which is the A, B, C of Archaeology—there can be no science of the subject. It is like Botany before Linnaeus.

This condition is largely due to neglect of Science among the students, whose ideas are limited to Art and Language. It is rare to find an excavator who has the requisite competence to use mineralogy, chemistry, surveying, geology, drawing, and other essentials. We find books of research which ignore the commonest physics, and even arithmetic.

The necessary type collections are seldom formed; and, if formed, they have a bad chance of survival. The needful space has never been provided for all the types of products found in any country, although the modern freaks of fancy glass and porcelain find ready housing. This is like a Chemistry which only dealt with scents or colours; it would lead nowhere in understanding the general subject. Till we have the necessary collections for comparison, especially of pottery, there cannot be a science of Archaeology. The possibility of great type series is bounded by the cost of sites and building. It is useless to expect the requisite gallery space in Central London; any collection within a couple of miles of Charing Cross is certain to be heavily curtailed and restricted to show specimens of merely general interest. Though for small objects, such as insects, type collections are possible in London, for bulky objects it is essential to get room enough by going elsewhere.

We may now turn to consider the relations of the excavator with the national museums involved. The ideal conditions for both parties were reached

most nearly by Maspero in Egypt. Though an amiable despot, he had a sense of the ultimate interests both of archaeology and of the Cairo Museum, which led him to keep up a frank and open fellowship with the excavator. The extent of the concession was anything up to a whole province, so long as no other concession was encroached upon, and in that region the excavator was largely trusted to act as the agent of the Museum interests, examining any likely clues, and choosing his work according to the prospects. This resembles the method recently outlined by Comte du Mesnil du Buisson in his handbook on excavating.

In general, the division of the results was fair; perhaps one year Maspero needed more than half, but that was offset by leaving the larger part to the excavator in other years. When the requirements of the Museum were exceptionally large, the law provided for taking the whole of the results of excavation on paying the cost of the season's work. This led to part payment when more than half was wanted. True, it was "Heads I win, tails you lose," a fat season could be solely to the benefit of the Museum, and a lean season the loss of the excavator. Yet both parties had definite rights and obligations; but recently the tendency has been to rule that the national museums have all the rights, and the excavators all the obligations.

The belief in the possibility of prohibiting the export of antiquities which has recently manifested itself is fallacious. If an object be worth a few pounds it does not pay to smuggle. If it be worth thousands, no laws will prevent its being smuggled out to a good market. A Greek vase can leave Athens as a flower-pot, the finest statuary can leave Iraq and be bought in London or America, and large pictures can leave Italy in the roof of an omnibus. Hence restrictive laws only retain the second-rate; the first-rate is out of reach of the law. This state of things emphasises the need of liberal and frank co-operation between the national museum and the excavator in each country, so that the tie of honour is respected on both sides.

Officials seem to forget that a full excavation means £2,000 or more a year spent in the country. To replace the work and finds of eight or ten excavating parties driven away by vexatious conditions—as in Iraq—would entail a charge of some £40,000 on their government's budget. Moreover, to oppress and harass the excavator destroys his zeal for work, if he *does* come to the country.

The larger part of the present difficulties in various countries is due to a narrow spirit of nationalism. Too often political influences press on an able curator, so that he dare not let go the objects which are not actually wanted in the interest of his museum; he fears to be accused of favouritism if anything good is released to the excavator, even when it duplicates what is already in hand. Where possibly the curator might lack the knowledge or experience to judge at sight, the fear of letting something of value escape would tend to cause an absurd stringency in the division of finds.

Needless trouble has recently arisen from the great amount of paper work demanded by the various authorities concerned. The purely mechanical listing of finds has various ill effects: it confuses the scientific registration by plan, position and level; it obscures the meaning of things; it uses up the time and attention of the excavator, which should be given to preparing a record for publication, and it often becomes an excuse for publishing nothing. A useful rule would be that no division of objects be made until the proof sheets of the plates are produced with every type object figured. Thus the published account would be ready a few months after the excavation, and it should supersede the preparation of long catalogues of duplicate objects.

The excavator should always have publication in view, and as soon as any object is found he should think how it can best be illustrated and recorded. Lists which have to be rearranged for book form imply wasted time. In some cases one meets with long verbal descriptions, which are useless if a figure and reference are supplied. Greenwell's *British Barrows* is a painful example, needing to be translated into plans by the reader before it can be understood.

It is generally recognised that it is the excavator's duty to preserve and record everything that is found. Woe to him if some common pottery is not duly registered! Yet, strange to say, every Government—outside England—entirely neglects to secure the most attractive objects—the gold work. Gold demoralises both the diggers who find it and the curators who select their museums' share of the finds. It cannot be expected that a digger will hand over for nothing the most valuable things which his pick discloses. To pay the metal value of gold and silver objects is the only way to ensure getting them. But the scientific excavator who thus makes sure will find that after paying for the work and also for the treasure, no allowance even for the metal is made when the things are taken by the government. This is simply because the legalised excavator is in the clutches of the Department of Antiquities; if any other man makes an accidental discovery he is promised the full market value, because no other terms will secure the find. It is only the scientific excavator who can be plundered safely. No wonder that the goose is killed that lays the golden eggs. An excavator is driven to the point that he cannot afford to find gold. How then does Archaeology fare? No gold is reported from some of the richest places. It is lost owing to the cupidity of the authorities, while gold is found every year in excavations where it is paid for.

In Rome, the Palatine excavations were inspected by officials who were awkwardly surprised when a great hoard of gold coins went direct to the dealers, and a large profit above mere gold value was lost to the government. At Ravenna, dock-workers found a body in gold armour, buried near the empty tomb of Theodoric; only one fragment was secured for the Museum. In England gold almost always went astray, or to the melting pot, till at last the energy of Sir George Hill impressed on the Treasury that force was useless, and now every finder can get fair value from the British Museum.

The encouragement produced by giving rewards for all that is found is a necessary part of efficient excavation. It quickens wits and sharpens eyes. At the Richborough excavations few coins were preserved until they were paid for, and then dozens came in. No one has a moral right to open up sites without securing all that is found. It is alleged in excuse that the finds will be contaminated by a mixture of things from outside, but only an incompetent excavator would be thus deceived. Such rewards seldom cost more than 5 per cent. of the total charges (apart from gold), and the method pays the excavator four times over: by securing honesty, stimulating discovery, by the care of fragments, and by the inducement to a better class of diggers attracted by great chances. Rewards must be paid immediately, for delay spoils the effect. No force, no overseers, are wanted; a friendly co-operation with interests in common, backed by instant dismissal for any deceit or ill conduct, is the road to success. Train your archaeologist in all that he ought to know, enlighten officialdom and nationalist rulers, and there would be a fair chance of learning the history of man in the past.

FLINDERS PETRIE.

SYRO-CAPPADOCIAN STAMP SEALS IN THE MUSEUM OF THE ACADEMY OF SCIENCE, LENINGRAD.

RECENT archaeological research has proved the wide spread of both cylinder seals and stamp seals in Elam, Mesopotamia, Cappadocia, and Syria. The variety of shapes among the stamp seals was very large, particularly in Cappadocia and Syria. Though the classification of types has been established by Hogarth,[1] Contenau,[2] and Delaporte,[3] a certain number of new types have been found, and I propose to illustrate these by examples in the Museum of Palaeography at the Academy of Science, Leningrad. I have to thank the Director of that museum, N. P. Likhatcheff, for his permission to publish these seals, the designs and inscriptions on which I photographed from their impressions on white modelling wax.

Though they were all acquired by purchase and their actual provenance is in every case unknown, these seals can be assigned to certain regions and periods by comparison with seals found *in situ* by Chantre,[4] Woolley, and others.

Pl. I, figs. 1a, 1b. Black steatite ; carefully made but much worn ; quadrilateral base 24 × 20 mm., height 9·5 mm. ; concave sides, boss on back transversely pierced by hole 3 mm. in diameter. On the flat base, the lion-headed eagle, Imgig, clutches with its talons the hindquarters of two horned quadrupeds with long tails (bulls ?). Two smaller birds are seen above the wings of the eagle.

This seal is undoubtedly Cappadocian (cf. Hogarth, *Hittite Seals, with Particular Reference to the Ashmolean Collection, Oxford*, 1920, p. 20, fig. 16 ; p. 21, fig. 17, A, B, E ; pp. 99–100), for its shape is alien to Mesopotamia ; but the design on it is early Mesopotamian (*c.* 3500–3000 B.C.).[5] [6]

Pl. I, figs. 2a, 2b. Light brown limestone ; much worn ; quadrilateral base 19 × 17 mm., height 16 mm. ; round-topped, flat-sided boss transversely pierced by hole 2 mm. in diameter ; linear incision along three edges of base. On the flat base, an apparently bearded god, with horned tiara and wearing the *kaunakes* and a shawl passed over the right shoulder, is seated on a stool ; a long tress of hair with curling end falls down his back. Before the god, a scorpion, a star, and various indistinct marks fill the field.

This seal also is Cappadocian in shape (cf. Hogarth, *op. cit.*, p. 20, fig. 15B ; p. 32, figs. 122, 127 ; p. 30 ; p. 100). The ritualistic scene is, however, characteristic of Sumerian and Akkadian cylinder seals [7] [8] of the third millenium B.C., save for the absence of worshippers. In Mesopotamia this composition was based on social conditions, and in Cappadocia also it may have corresponded with a similar social differentiation ; Nos. 1, 2 and 3 were probably cut for the use of princes, state functionaries, priests or other representatives of the dominating class in the primitive state of that time.

Pl. I, figs. 3a, 3b. Yellowish-white limestone ; much worn ; truncated pyramid, with quadrilateral base 15 × 14 mm., height 9 mm. ; horizontally pierced near top by hole 2 mm. in diameter. On the base is a scorpion, with drill marks (?) on the tail.

PLATE I.

9a

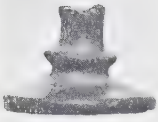
9b

10a

10b

11a

11b

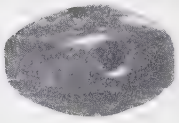


12a

12b

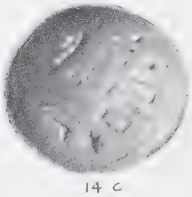
13a

13b



14a

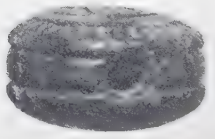
14b



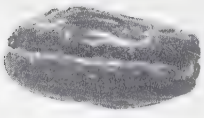
14c

15b

15c



15a

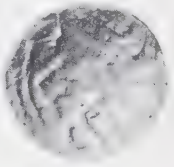


16a

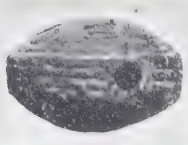
16b

16c

17b



17c



17a

PLATE II

This is an essentially Cappadocian shape (cf. Hogarth, *op. cit.*, p. 18). The scorpion was a religious symbol in Mesopotamia where it often occurs on archaic cylinder seals, both alone and in stylized beast-groups.[9] [10] But it is also quite frequent on early Syro-Cappadocian cylinder and stamp seals (cf. Hogarth, *op. cit.*, No. 30 (cylinder); No. 56 (hemispheroid), both of steatite).

Nos. 1, 2 and 3 were engraved with three tools, the point, the chisel and the bow-drill. The material was in each case a soft stone. There is no doubt that they were local productions of Cappadocia, or, perhaps, neighbouring regions to east and south. Nos. 1 and 2 show considerable skill in stone-cutting. The primitive engravings, on the contrary, are characteristic of local craftsmanship only in their style, their subjects being obviously borrowed by local artists from Mesopotamian cylinder seals. Although later than the originals, these scenes belong to the third millenium B.C., a period when cylinder seals were not usual in Cappadocia, and they show once more the mixed character of the Cappadocian culture. Indeed, Mesopotamian colonies are known to have existed in Cappadocia in that millenium, though it is unnecessary to agree with Hogarth that "any culture which Cappadocia possessed before 1500 B.C. was Mesopotamian." On the other hand, the local glyptic production was not yet properly Hittite at that time; further excavation is needed to throw light on this subject.

It seems possible now to refute Hogarth's assumption that the origin of the Cappadocian stamp seals was comparatively late (*c.* 1400 B.C.): he "excluded from consideration Cappadocian sealings, possibly of the Ur period" (*i.e.*, *c.*2420–2300 B.C.) "as not proving local production—the imprints may have been made with Mesopotamian seals." On the supposition that the stamp seal was invented only "in the early days of the Hattic power," Hogarth completely omitted the earliest stamp seals from his classification; there the archaic glyptic is represented solely by cylinder seals as Class IA, whereas each of the following Classes II, III, and IV contains cylinder seals (A) and stamp seals (B). In my opinion our Nos. 1, 2 and 3 carry back the invention of stamp seals in Cappadocia probably to the third millenium B.C., if not earlier. And I venture to make a Class IB to include Nos. 1, 2 and 3, and certain stamp seals of the Ashmolean collection, *e.g.*, the steatite "loop" No. 263 (Hogarth, *op. cit.*, pl. IX, pp. 43, 84), on which a worshipper stands before a seated deity, with a crescent moon between them. This seal Hogarth assigns to his Class IVB. Its shape and its subject, borrowed from the Mesopotamian repertory but engraved in the crude Cappadocian manner, are clearly characteristic of early Cappadocian stamp seals, though it seems to be rather later in style than No. 2.

When the stamp seals now placed in Class IB are sufficiently numerous, further differentiation into sub-classes will be necessary, for Hogarth's Class I comprises too long a period—from the earliest times until *c.* 1600 B.C.

Pl. I, figs. 4a, 4b. Black steatite with grayish patches; triangular base, 21 x 18 mm., with rounded angles, height 12 mm.; the nearly hemispherical boss horizontally pierced by hole 4 mm. in diameter. On the flat base a quadruped is rudely engraved—apparently with the point only—and on it another is springing with open jaws. This is perhaps a conventional, geometrically schematised representation of a lion attacking a running horse. Similar rudely incised animals are seen on a seal from the region of Smyrna, now in the Louvre.[11] Both the conventionalised design and the unnatural attitude of the animal filling the upper part of the field show No. 4 to be very primitive.

I consider that both the shapes and the style of engraving of early seals of this type represent the local craftsmanship of Cappadocia. Towards the end of the third millenium B.C. a new period of Cappadocian history opened with the collapse of the Mesopotamian influence. A marked decline in artistic skill set in, and the seals that were produced evidently belong to an undeveloped society and reveal purely local characteristics. These seals bear no decisively Hittite elements as do the Hittite cylinder seals of the next period: they probably were made by a people which preceded the Hittites in those regions.

The following two seals differ very much from those already described.

Pl. I, figs. 5a, 5b, 5c, 5d, 5e, 5f. Black steatite; much worn; massive quadrilateral prismatic body, 25 × 22 mm. at base, 23 × 21 mm. at shoulder, total height 48 mm.; bead-like handle pierced horizontally by hole 2 mm. in diameter. On the base *5b*, a winged lion-gryphon (?) is seated with tail erect and various indistinct marks occupy the field before him: on the side *5c*, a similar animal faces left, its head with open beak worn and indistinct: side *5d* shows a lion with open jaws but no wings: side *5e*, a bull with the ground line indicated at a level above his hoofs: and side *5f*, a man with a cap (?) and apparently a short garment, his hand raised and presenting the open palm to an altar of incense (?) [12] from which a flame seems to be rising.

A somewhat similar seal in the Louvre (Gaudin Collection), acquired in Western Asia Minor, has similar scenes engraved on the four sides and the base,[13] and though in Hogarth's classification there is nothing precisely analogous in shape, such scenes occur on acknowledged Hittite stamp seals. There is then sufficient evidence to regard No. 5 as a Syro-Cappadocian or North Syrian seal. The monotony of the attitude and size of the animals walking as in file suggests that the *motif* was derived from the decorative borders on pottery and also on archaic cylinder-seals.[14]

The style of engraving differs from that on the earlier seals here described; it was done with a hollow chisel instead of the point, so that the animals appear more realistic and vigorous than on No. 4, for instance, where they are completely lifeless. Indeed, the animal figures on No. 5 might be regarded as predecessors of those seen in the developed Assyrian art of the IXth–VIIth centuries B.C.

The seated lion-gryphon on the base of the seal differs from the usual Hittite representation in having the two wings displayed instead of their being represented in profile by one. I therefore assign No. 5 to the period of decline of the Hittite power and the cultural decay of those regions—probably to the end of the second millenium B.C., and perhaps even the beginning of the first.

Pl. I, 6a, 6b, 6c, 6d, 6e. Faience; much damaged by wear; quadrilateral prism, base and top 12 × 12 mm., height 21 mm.; pierced lengthwise by hole 4 mm. in diameter. The hole is not quite in the middle, but nearer to one angle; it is probably the work of an unskilled craftsman. Only inside the hole is the faience white; on the outside, the seal appears to be gray glazed, but unequally, so that damage by fire is suggested, and hence the possibility that this seal was found in a cremation grave.

On each side, the representation of an animal is framed above and below by a ladder border: on side *6a*, a stag, with a fawn beneath it and bird above, faces a tree; on side *6c*, a lion has an arrow in its back; on side *6d*, a winged lion-gryphon (cf. Pl. I, fig. *5b*) stands over a plant; and on side *6e*, a goat suckles her kid while an eagle is poised above. The engravings were apparently done with point and chisel.

Though there are no seals of this type in Hogarth's classification, one of similar style has been found in the Ališar mound in Anatolia[15] and dated to the first millenium B.C. This seal is engraved in the same style, with the self-same ladder border framing the scenes above and below (cf. also, Pl. II, figs. 11*b*, 13*b*, 15*b*). Another seal of identical shape, found in the necropolis at Minet el-Beida, Syria,[16] in 1931, and dated to the XIVth or XIIIth century B.C., has the same ladder border, not only above and below the scenes but dividing each side into two registers. Birds and beasts of similar style to those on No. 6 fill the sides of this seal.

The essential features of this type of seal are its size, the vertical hole, and the nearly continuous row of animals distributed round the four sides. It is possible that seals of this shape were an intermediate stage between cylinder seals and flat stamp seals[17] at the period when the former were going out of fashion and stamp seals coming more and more into vogue at the close of the second and beginning of the first millenium B.C. The rows of animals were apparently copied from the imprints of cylinder seals, in which images can be repeated *ad infinitum* : cf. the row of similar animals on a cylinder seal of black serpentine in the Pierpoint Library,[18] where the horns of the stag are represented in the same way as on No. 6*b*. Ward dates that seal at " perhaps 1000 B.C.," which seems to be approximately right. But I think he was wrong in regarding it as Babylonian ; its style is Syro-Cappadocian. These rows of animals on the cylinder seals may have been derived in turn from similar rows on pottery, examples of which were found in Stratum IV (the epoch of the Hittite Empire) at Ališar.[19]

The spread eagle seen on No. 6 and also on the seal from Minet el-Beida is undoubtedly inherited from the Hittite glyptic art of the second millenium B.C.

As the engravings on No. 6 are also akin to engravings on cylinder seals from the cremation burials at Merj Khaimis, north of Carchemish (cf. Hogarth, *op. cit.*, p. 79, fig. 87), the burnt surface of No. 6 is significant. On the evidence available, I am inclined to date No. 6 to *c.* 1000–900 B.C., a date which accords with von der Osten's dating of his Stratum IV and seal at Ališar. Though this transitional period is still obscure, it may be useful to regard No. 6 as the nucleus of a new group to fill a gap in Hogarth's classification of so-called Syro-Cappadocian seals. Indeed, Nos. 5 and 6 with their local workmanship and primitive though vigorous designs may have belonged to vassal peoples in the Hittite empire.

The remaining stamp seals to be discussed are engraved with geometrical designs and script-characters.

Pl. I, 7a, 7b. Greenish schist ; very roughly made and badly worn ; bead-like, irregular oval base 22 × 18 mm., height 11 mm. ; horizontally pierced between base and rounded top by a hole 4 mm. in diameter. The flat base bears a lattice design roughly incised with a point. Similar geometrical designs occur on a seal in the Louvre (Gaudin Collection),[20] and one from Tell Basher which Hogarth (*op. cit.*, pl. VII, no. 213, pp. 39, 77) assigns to his Class III B (1400–950 B.C.). No. 7 is then Syro-Cappadocian, though characteristic Hittite elements are wanting. Its rudimentary shape and the rough geometrical pattern inherited from the Neolithic decorative repertory through the Bronze Age lead me to assign it to the third (perhaps even to the fourth) millenium B.C.

Pl. I, 8a, 8b. Black serpentine (?) ; roughly made ; irregular oval base 17 × 15 mm., height, including short handle slightly on one side of back, 11 mm. ;

horizontally pierced by hole 3–4 mm. in diameter, also slightly to one side. On the flat base is what appears to be an inscription of seven characters, some doubt as to whose authenticity cannot be excluded. Similar characters are, however, to be seen on Syro-Cappadocian seals in the Ashmolean collection (Hogarth, *op. cit.*, pl. X, pp. 45–7).

Though no seals of exactly similar shape are known to me, it seems that its form was derived from Hogarth's "loop" (*op. cit.*, pp. 20, 21, figs. 15–17), and the decadent character of the script also attests a late date.[21]

The two following seals belong to the group which Hogarth (*op. cit.*, pp. 21–2, fig. 20) has well named "hammers," from the shape of the handles.

Pl. II, 9*a*, 9*b*. Black steatite; nearly cylindrical base, 12·5 × 11·5 mm. by 6 mm. high; height, including hammer-shaped handle, 20 mm.; bar of handle transversely pierced by hole 3 mm. in diameter. An incised line along the top of the handle is partly worn away. On the flat base a border of continuous spirals between circles frames an inscription. Such a frame is familiar on Syro-Cappadocian, and especially on true Hittite seals (Hogarth, *op. cit.*, pl. VII, pp. 38, 75), concerning which Hogarth remarks that these spirals are indistinguishable from the finest Late Aegean spirals, *e.g.*, those of Cyprus. The bases of these "hammer" seals vary considerably, being cylindrical, cubical, octohedral, faceted, discoid; they are often engraved on the sides as well as underneath, as on one in the British Museum (Hogarth, *op. cit.*, p. 74, fig. 77*b*, *d*), where the border of spirals is doubled. There are also interesting specimens at Berlin.[22]

Pl. II, figs. 10*a*, 10*b*. Bronze; cylindrical base, with markedly concave side, 23 mm. in diameter by 10 mm. high; height, including long-necked "hammer" handle, 31 mm.; bar of handle, tapered towards either end, transversely pierced by hole 3 mm. in diameter. On the flat base, four continuous spirals not symmetrically placed are framed by a circular ladder border. A silver seal of identical shape in the Louvre[23] bears the same design, which is also engraved on a very peculiar steatite seal, No. 418, in the Hermitage Museum.

According to Contenau,[24] "hammers" belong to the period 1550–1100 B.C., and he assigns those of copper and silver to the later half of the second millenium B.C. Hogarth (*op. cit.*, pp. 73, 101, 104) rightly regards "hammer" seals as a development from "stud" seals, and as invented in Cappadocia—not a single specimen has been found in Syria. Of them he says that they "were used doubtless for the signets of kings and princes towards the end of the great period of Hattic power, the late fourteenth and the thirteenth centuries" before our era.

Pl. II, figs. 11*a*, 11*b*. Copper, with the surface darkly patinated; conical base 14 × 13 mm., height, including bead-shaped swelling at top of base and flattened handle, 25 mm.; handle pierced by hole 2 mm. in diameter. On the flat base, an inscription in seven characters is framed by a ladder border (cf. No. 13*b*, and also the design on certain Syro-Cappadocian seals in the Louvre).[25]

Though the shape of this seal is perhaps unique, it is obviously related to the handled Cappadocian seals that Hogarth has named "stalks" (*op. cit.*, p. 20, figs. C, E), and to a copper seal in the Louvre.[26] This elaborate seal evidently belongs to the same region and epoch as the "hammer" seals.

Pl. II, figs. 12*a*, 12*b*. Black steatite; fragmentary and much worn; flattened conical base 21 × 20 mm., present height, including shelf-like expansion at top of base and part of the neck, 14 mm. On the flat base, a roughly incised inscription is framed by a circular border.

This seal obviously belongs to the same Cappadocian family as No. 11. Its characters recall those on Hissarlik whorls and Enkomi balls, *i.e.*, from Asia Minor and Crete, which Hogarth (*op. cit.*, p. 89, fig. 112) regarded as cognate with certain Hittite characters.

Pl. II, figs. 13*a*, 13*b*. Black steatite; much damaged; thick circular base 24×23 mm., height, including thick, vertically grooved neck and the nearly hemispherical head, 28 mm.; horizontally pierced through the head by a hole 4 mm. in diameter. An incised line runs round the base, beneath which an inscription is framed in a circular ladder border, as on No. 11*b*.

This extraordinary seal obviously belongs to the Cappadocian family: in shape it appears to be a peculiar combination of Hogarth's "knob," his massive "stud," and the "stalk" (*op. cit.*, pp. 20–21, figs. 18, 17, 15). A black steatite seal of somewhat similar shape but smaller is seen in the Louvre.[27] The clumsiness of No. 13 compared with Nos. 9 and 10, which belong to the best period of the Hittite culture, is reminiscent of No. 5 and indicates a certain decay in the glyptic art. It is probably to be assigned to the period of decline of the Hittite Empire, and the style of the inscription supports this dating.

The four button-shaped "seals," Nos. 14–17, are typically Hittite. Seals of this type were always cut in soft stones, chiefly steatite, with both upper and under sides convex and engraved—the shape an inconvenient one for a seal, the engraving of both sides unnecessary, as one side alone would have served the purpose. Garstang[28] and Hogarth (*op. cit.*, pp. 22, 87) regard them rather as "amulet pendants"—Hogarth named them "bullae," but I would prefer to designate them "button-pendants."

Pl. II, figs. 14*a*, 14*b*, 14*c*. Black steatite with yellowish veining; 22 mm. in diameter, height 15 mm.; diameter of hole 3 mm. A Hittite inscription within a linear border on each face.

This button-pendant is said to have been found at Tell el-Amarna.[29]

Pl. II, figs. 15*a*, 15*b*, 15*c*. Dark green steatite; 26×25 mm. in diameter, height 16 mm.; diameter of hole 5 mm.; two deeply cut parallel furrows round the middle. An inscription on each face; within a ladder border on one face, enclosed in a circle on the other. Cf. similar "seals" at the Louvre.[30]

Pl. II, figs. 16*a*, 16*b*, 16*c*. Dark red steatite; much damaged and worn; 25×24 mm. in diameter, height 13 mm.; diameter of hole 4 mm. On one face, script and two symmetrically disposed stars within a border; on the other face, deep linear incisions framed by a deeply cut border. Cf. Hogarth, *op. cit.*, pl. X, pp. 47, 48; p. 91, fig. 115, for similar button-pendants with decadent Hittite script.

Pl. II, figs. 17*a*, 17*b*, 17*c*. Yellowish-gray pottery;[31] damaged and much worn; 23 mm. in diameter, height 15 mm.; diameter of hole 3 mm.; three parallel lines incised round the broad middle. On the better preserved face, a symmetrically placed geometrical design is enclosed in a circular line; the other face has been partially destroyed.

According to Hogarth (*op. cit.*, p. 91), button-pendants ("bullae") of this type form 90 per cent. of the Hittite seals that bear inscriptions. There are good examples in the Louvre,[32] at Berlin,[33] and in the Hermitage Museum.[34] In the Ashmolean Collection, one from a house of sun-dried brick at Carchemish[35] is dated by Hogarth at probably the Xth century B.C.: others came from cremation graves at Deve Kuyuk and Tell Basher.

None of the button-pendants published here belong to the best period of

their production, *i.e.*, during the Hittite Empire in the second millenium B.C. At that period the workmanship and the script were much more careful; and, moreover, in the middle of the inscriptions there were often figures of fantastic animals, deities and kings.[36]

On No. 14 the characters seem to be true Hittite hieroglyphs, and this specimen is probably older than Nos. 15–17, whose inscriptions resemble those on a similar "Hittite seal" from tomb 523 at Mycenae, and now in the National Museum at Athens.[37] These latter seals obviously all belong to the period of the decline and fall of Hittite culture in the XIth to VIIth centuries B.C., coinciding with the cremation age. The large numbers and poor workmanship of these button-pendants suggest that they were used as amulets in all the various social strata, whereas the true stamp and cylinder seals, and also the earlier button-pendants, belonged to the privileged classes in the flourishing Hittite empire.

LENINGRAD. A. PROCOPÉ-WALTER.

[1] Hogarth, *Hittite Seals, with Particular Reference to the Ashmolean Collection*, Oxford, 1920.

[2] Contenau, *La Glyptique syro-hittite*, Paris, 1922.

[3] Delaporte, *Catalogue des cylindres et cachets orientaux, Musée du Louvre*, Paris, 1920–3.

[4] Chantre, *Mission en Cappadoce*, Paris, 1898.

[5] Frankfort, *Iraq Excavations of the Oriental Institute*, 1932–3, Chicago, 1934, p. 49, fig. 29.

[6] Ward, *Seal Cylinders of Western Asia*, Washington, 1910, p. 32, no. 62a.

[7] Ward, *Cylinders and Other Oriental Seals in the Library of J. Pierpont Morgan*, New Haven, 1920, pl. II, figs. 11, 12, pp. 28 f.

[8] Delaporte, *Catalogue des cylindres de la Bibliothèque Nationale*, Paris, 1910, pl. VIII, p. 43 and Introd., p. xi.

[9] Delaporte, *Les cylindres-sceaux du Musée de Florence*, Aréthuse, 1927, pp. 56 s., pl. VII, no. 7.

[10] Hermitage Museum, no. 514 (probably of IVth millenium B.C.), on which similar drill marks are seen on the scorpion's tail.

[11] Delaporte, *Cat. Louvre*, pl. 60, fig. 6b, p. 96.

[12] Cf. the column-like offering-table on the Hittite ("syro-cappadocien") cylinder seal no. 451 of the Bibl. Nation.; Delaporte, *op. cit.*, pl. XXX, p. 253.

[13] Delaporte, *Cat. Louvre*, pl. 60, fig. 10a-f, p. 96.

[14] Cf. the files of animals on archaic cylinder seals of Elam and Mesopotamia; for example, in the Louvre, Delaporte, *Cat.*, pls. 25, 26, 27 (*Delégation en Perse*); pl. 63 (Sumer and Akkad, *Acquisitions*).

[15] von der Osten, *Discoveries in Anatolia*, Chicago, 1933, p. 33, fig. 31, no. C 2581.

[16] *Archiv für Orientforschung*, t. VII, 5/6, s. 294, "Ausgrabungen in Minet el-Beida"; cf. fig. 3.

[17] Cf., Procopé-Walter, "Ein Bindeglied zwischen Rollsiegel und Hemiovoid (Scarabäoid)," *Archiv für Orientforschung*, t. VI, 2/3, pp. 65–74.

[18] Ward, *op. cit.*, pl. XVIII, no. 130, p. 68.

[19] Erich Schmidt, *Anatolia through the Ages: Discoveries at the Alishar Mound*, 1927–9, Chicago, p. 115, fig. 158.

[20] Delaporte, *op. cit.*, pl. 60, figs. 1, 2, p. 96, seals roughly shaped like a duck's head and a horse's hoof.

[21] Cf. Contenau, *op. cit.*, pp. 170 ff., IIIrd period: XIth–VIth centuries B.C.

[22] Ed. Meyer, *Reich und Kultur der Chetiter*, Berlin, 1914, p. 46, fig. 37. This seal has Hittite hieroglyphs on the base; for the shape, cf. an exquisite octohedral variation of the same type (but with the top broken off), *ibid.*, pl. IV, pp. 15 f., with Hittite characters framed by a typical guilloche on the base, but with gods and worshippers, manifesting Babylonian influence. Meyer and Prinz date this seal to the first half of the second millenium B.C.

[23] Delaporte, *op. cit.*, pl. 101, fig. 6a–b, p. 202.

[24] Contenau, *op. cit.*, pp. 121 ff., IInd period; cf. also p. 98, pls. X–XII.

[25] Delaporte, *op. cit.*, pl. 100, figs. 7b, 20b, pp. 200 f.

[26] *Ibid.*, pl. 98, fig. 12a, p. 198.

[27] *Ibid.*, pl. 99, fig. 5a, p. 199.

[28] Garstang, *The Land of the Hittites*, London, 1910, p. 160; *ibid.*, pl. XL, a button-pendant of ivory, from Denek-Madên.

[29] Hittite seals have been found in Egypt. A button-pendant in the Ashmolean Collection (No. 318; Hogarth, *op. cit.*, p. 47) was bought there.

[30] Delaporte, *op. cit.*, pl. 102, fig. 1a–b–c, p. 202; pl. 100, fig. 23a–b–c, p. 201, both of black steatite.

[31] Cf. a pottery Cappadocian handled seal: Chantre, *op. cit.*, pl. IV, fig. 15.

[32] Delaporte, *op. cit.*, pl. 100, fig. 23; pl. 101, figs. 2, 16, 17; pl. 102, figs. 1–7; for design, cf. Contenau, *op. cit.*, pl. XLIV, no. 333.

[33] Ed. Meyer, *op. cit.*, p. 47, fig. 38: for shape, V.A. 3163, for design, V.A. 3162.

[34] Nos. 11361, 1288.

[35] Woolley, *Carchemish, II, The Town Defences*, London, 1921, p. 62, pl. 25, fig. *b*, 8 and 9.

[36] Cf. Hogarth, *op. cit.*, pl. X, nos. 313–8, pp. 46, 90.

[37] *Cambridge Ancient History*, Vol. I (plates), 1927, pp. 166–7, fig. h.

NOTES ON A TEMPLE AT 'AIN AMUR IN THE LIBYAN DESERT.

'Ain Amur, about 70 km. north-west of Kharga and the last waterhole on the northern route to Dakhla Oasis, was visited by the author in 1932. The accompanying photographs, and those few measurements and observations that it was possible to make without excavation of the buildings near the spring, are here published to place on record a site so remote as to be almost unknown. In recent years Mr. H. J. L. Beadnell alone has illustrated the ruins at 'Ain Amur by a general photograph.[1]

Earlier scientific visitors were Cailliaud, Drovetti and Edmonstone. Cailliaud, who translated Drovetti's account of "a Greco-Egyptian temple" at 'Ain Amur,[2] included a plan of it in his separate volume of plates,[3] and described the site in more detail.[4] According to Sir Archibald Edmonstone's account,[5] he found the temple in much the same condition as now.

Sir Gardner Wilkinson, who visited the site some years later, noted "... a small temple, and a well of water called Ain Amoor, surrounded by a large inclosure of crude brick, intended to protect the temple and to secure the spring. Kneph, Amunre and Maut are the principal deities; and though the name seems to be of a Cæsar, the temple has the appearance of greater antiquity than the generality of those in the oases."[6] In a later work he adds: "I could find no remains of a town, and it is possible that this temple was intended merely to add a sanctity to the site of the spring and to ensure its protection."[7]

Hoskins unfortunately did not visit 'Ain Amur, and merely quotes Cailliaud's observations.[8]

To the names of earlier explorers recorded at the entrance,

A. Edmonstone	Feb. 1819
J. I. Hyde	17 Dec. 1819
Droveti Rocincana	1891
A. Barguss Desosten	1893
D. Morice	Dec. 1896,

the soldiers who occupied the oasis in the Senussi campaign during the Great War added their names.

The building as it now stands (frontispiece) is an oblong structure 16 by 8 m., the long axis north-west, south-east. Traces of walls at ground level are all that can be seen of the forecourt shown in Cailliaud's plan; this would have added nearly another 6 m. to the length of the building. In the centre of the south-eastern wall a narrow entrance leads through a massive portal, roofed with limestone slabs, 2·96 by 0·66 by 0·40 m., into which smaller stones of the succeeding course are slotted. At either end these have square holes in their upper surfaces, as seen in pl. III, A and B. Up to this level the doorway seems not to have been bonded to the adjacent walls; in the frontispiece the crack between them can be seen.

The interior is divided into two nearly equal parts by a wall 0·40 m. thick. Three metres north-west of this wall are traces of a second transverse partition, beyond which are three chambers, seen at a distance in the frontispiece, two of which are roofed by limestone slabs only slightly smaller than those over the entrance.

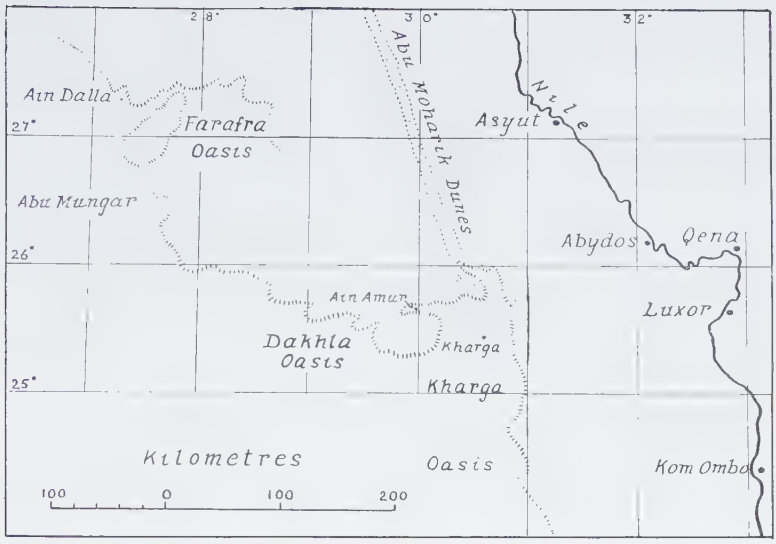
On the outside of the north-west wall are the carvings and inscriptions figured in pl. IV B, but so mutilated that insufficient remains to recapture the sense. The defacement appears to be of comparatively recent date. The facts that the roofs of the two chambers are at different levels and that their roofing

A

Doorway, part of N.E. Wall and Transverse Partition.

B

Doorway of Temple and part of S.W. Wall.



A.

B.

HIEROGLYPHS ON OUTSIDE OF N.W. WALL.

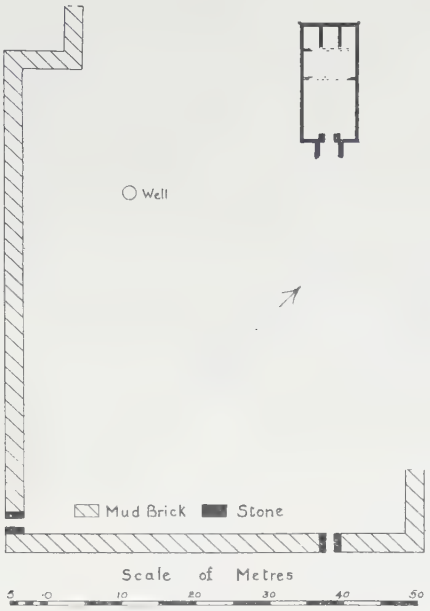
PLATE IV.

'AIN 'AMUR.

Reed-filled Well and Western Angle of Cultivated

Plate V.

'Ain Amur.



Plan of Temple and enclosure.

slabs truncate the inscription point to a certain amount of rebuilding at some unknown date.

Whereas the roofs are of limestone with coarse diagonal dressing, the walls are a fine-grained marl, in blocks which average 0·35 by 0·2 by 0·16 m. in size, though some are as large as 0·66 by 0·40 by 0·22 m. Some of these blocks show a fine diagonal dressing round the edges, with square pecked tool marks in the centre. No mortar was used.

To the south-west and south-east of the building are mud-brick walls, in places 5 m. high and 2·5 m. thick, which are apparently the remains of a court-yard, approximately 70 by 50 m. which enclosed the temple and well (see plan). A trace of a third wall is found in the eastern corner, but none on the north-west. One entrance of dressed stone lies 13 m. from the eastern corner, opposite the temple doorway and about 53 m. from it. A second, similar, entrance is in the southern corner at the end of the south-west wall. This wall after 63 m. turns at right angles (north-east) for 8 m., when there is another short stretch in the original direction. Pl. V shows this part of the enclosure with some remnants of mud brick buildings beyond the reed-filled well in the foreground. These walls were built in sections very inadequately bonded together, of bricks averaging 35 by 15 by 8 or 10 cm. in size. On the outside the courses are alternately of longs and shorts, on the inside all shorts. There are also traces of coarse plaster 2 cm. thick.

E. W. Gardner.

[1] *An Egyptian Oasis*, 1909, p. 165 and plate opposite.

[2] *Travels in the Oasis of Thebes and in the Deserts situated East and West of the Thebaid in the Years 1815, 1816, 1817, 1818*, by F. Cailliaud, 1822.

[3] *Voyage à Meroë*, QIWE, pl. xlii, 1.

[4] *Ibid.*, 1826, vol. I, pp. 227–9.

[5] *A Journey to Two of the Oases of Upper Egypt*, 1822, pp. 60–1.

[6] *Topography of Thebes and General View of Egypt*, 1835.

[7] *Modern Egypt and Thebes*, 1843, vol. II, p. 366.

[8] *Visit to the Great Oasis of the Libyan Desert*, 1837, p. 250.

REVIEWS

Prehistoric Assyria (*The Excavations at Tall Arpachiyah*, 1933). By M. E. L. Mallowan and J. Cruikshank Rose. Pp. xv, 178. Pls. XXII and Frontispiece, two coloured. 1935. (Oxford University Press.) 21/-

This bound volume is reprinted from "Iraq," vol. II, part I, and therefore does not possess an index, which considering its importance and the able way in which it is arranged and written is certainly a pity.

The site of Arpachiyah (Tepe Rashwa) lies less than four miles from the Tigris and the ancient city of Nineveh with which it was once connected, and though a small and low mound it has yielded an immense amount of most important material for the study of early man. The buildings found in it, all of extremely early date, were at first of *pisé* which later was partly supplanted by mud-brick. The early date of the site is evidenced by the four top levels containing remains of the Al 'Ubaid period, traces of which period were also found in a cemetery on the western side of the Tepe. No less than 50 graves were excavated. During the next period (3 m. below the surface) the houses were of better quality but built of *pisé*, and this period is referred to Tell Halaf times. That there was no overlap is indicated by the fact that the Al 'Ubaid grave-diggers destroyed Tell Halaf remains. In the upper two metres of the mound a few roughly shaped plano-convex bricks were found, which shows that this type of brick (peculiar to Mesopotamia) is earlier than has been supposed. In southern Mesopotamia it is thought not to extend further back than the beginning of the Early Dynastic Period (3,100–2,500 B.C.).

In the earliest levels of the mound a style of building was found that is new to Mesopotamia. These buildings, of which ten were excavated, had a circular ground plan, and stone foundations with a superstructure of *pisé*, and they lay at four distinct levels. The earliest of these *tholoi* were simple in structure, but as time went on they increased in dimensions and a rectangular room was added to the circular chamber. It would seem that these *tholoi* were domed, but how could not be ascertained as they were not in a good state of preservation; in only one building did part of the spring of the dome remain. Mr. Mallowan compares these *tholoi* with the modern bee-hive houses around Aleppo which are undoubtedly descended from them, and with the ancient bee-hive tombs of Mycenae. The latter, however, were underground, whereas the *tholoi* at Arpachiyah with one exception stood above ground. With some reason the excavator also suggests that the *tholoi* in the Mediterranean area may have been derived from early Mesopotamian examples. The thick walls of the latter and the fact that important burials of the Tell Halaf period lay in their close vicinity show them to have been important buildings, and it is thought that they were connected with a cult of the Mother goddess as a large number of figurines of this deity were associated with them.

A full description is given of the Al 'Ubaid ware, which was all of one generation as no grave overlapped another. The burials were in general oriented E. to W., and beads and stone celts were found with the bodies as well as much pottery, both painted and unpainted. Fractional burials formed about one-third of the whole.

The Tell Halaf wares found in the lower levels are of the utmost interest.

In two rooms especially of a single house in the sixth settlement, a quantity of polychrome pottery was found sumptuously painted in three colours, red, black, and white, on a pink-coloured clay or in lustrous red and black on a burnished orange-red slip. The illustrations, good as they are, do not do justice to this brilliant ware which was mostly simple platters, bowls and saucers, many of which were apparently derived from metal forms. A favourite design was a rosette in the centre, surrounded by narrow circular borders composed of one or several *motifs*. Another central device was a Maltese cross or square, and examples of the quartered circle with a four-petalled rosette inside are not unlike a device that was commonly used in the Indus Valley cities. The *motif* of intersecting circles that occurs on some of this Tell Halaf pottery is the device most commonly seen at Mohenjo-daro and Harappa. A characteristic feature of these very early wares from Arpachiyah is the circular spots surrounded by stippling which have strong affinities with the solar markings on much of the Mohenjo-daro pottery. Of especial interest is the *bukranium* design which Mr. Mallowan has traced from its early natural form to a developed type in which it is linked up to form a continuous pattern. Animal and plant designs were, however, comparatively rare ; they were found only in the early period, chiefly on sherds of imported Samarra ware, of which only one whole jar was found.

Numerous pottery female figurines, some with hands touching the breasts, are undoubtedly figures of a "Mother goddess." Pottery figures of doves, a bird associated with this goddess in many other ancient civilisations including India, are of exceptional interest. The amulets are especially distinctive ; the double-axe forms of the Tell Halaf period were, of course, a motive well known in Crete, where both the dove and the double-axe occur in the cult of the Mother-goddess. There seems, indeed, to have been some religious contact between early Crete and Western Asia, as Sir Arthur Evans has suggested. That many of the amulets found were used as seals is proved by numerous specimens of clay sealings that were used as dockets for store jars. The designs on these amulets are in the main of the simplest description, lattice patterns being the most common ; though primitive in design they would be most difficult to forge. Not a single example of writing was found and no cylinder-seals occurred. Metal was very rare and one cast copper celt was found in the upper strata.

With regard to the dating the mound, Mr. Mallowan considers the first four levels as earlier than or just overlapping the Uruk period of Southern Mesopotamia, and he would correlate them with the Al 'Ubaid 3 of Woolley's work. The sixth level which marked the climax of the Tell Halaf ware he would provisionally assign to the Susa I period, leaving four or more levels from Pre-Susa I to Neolithic Iran.

There is little fault to find with this admirable report. Mr. Mallowan has made the utmost use of his material, and he is to be congratulated on a piece of work that has been very well done. I do not see, however, why he should use the word "terra-cotta" in place of "pottery," nor what is wrong with "faience" in place of "frit." To most archaeologists, "frit" is used for glazing ; and it should not be used of articles of which it only forms a part.

E. Mackay.

Palestine and Israel. By Flinders Petrie. Pp. 99, pls. 16, 2 maps. 1935. (Society for Promoting Christian Knowledge.) 3*s.* 6*d.*

Sir Flinders Petrie has produced a book of less than a hundred pages giving clearly and explicitly the history of Palestine and Israel from the archaeological

evidence which has recently—and largely by his own exertions—been brought to light. He compares the archaeological evidence with the documentary records, so familiar to us in the Bible, and shows how one supplements the other. He is a past master in the art of giving the largest amount of information in the fewest possible words, yet with extraordinary facility of expression.

M. A. Murray.

Das ägyptische Märchen (*the Egyptian Tale*). By Max Pieper. Pp. 89. 1935. (Morgenland, vol. XXVII, J. C. Hinrichs.)

Terminological zeal is of no avail with Egyptian tales, for the attempt at exact definition of the "Märchen" breaks down in the case of ancient Egypt, and the term has to be used for all kinds of stories. However, the English word "tale" is good enough, and this study is entertaining and interesting: entertaining because the tales are well told under the sections (1) Old period, (2) New Kingdom, (3) Herodotus, and Demotic tales; and interesting because of the writer's critical equipment and wide survey. Tales of purely historical character, such as that of Sa-nehat and real myths (tales in which natural phenomena are personified) are omitted. In his review of the first section the author emphasises the point that these stories must have been worked up from pre-existing folk-tales, though none have been preserved. Another interesting point is that they should become literature so early. In the fourth and last section, entitled "Survival of the Egyptian tale in literature", the origin of the Faust legend is traced to Egypt. It seems likely that the story in the Westcar papyrus of the origin of the Vth dynasty influenced the Greek legend of the birth and destiny of Cypselus; the marriage of Peleus and Thetis seems to show the influence of the marriage of Bata told in the Orbiney papyrus, whilst the tale of the Blinding of Truth makes its first appearance in Egypt. Variants of the tale of the Treasury of Rhampsinit, told by Herodotus, are quoted from countries as far apart as Russia and Ireland. Egyptian motives are also to be found in India, which has long been regarded as the home of story, but it is not possible to prove that these were derived from Egypt. L. B. E.

Herkunft, Entstehung und antike Umwelt des hebräischen Volkes. (The Rise, Origin, and Ancient Neighbours of the Hebrews.) By S. Spinner. Pp. viii+539. 1933. (Vernay, Vienna.)

The composition of this book is peculiar: its 539 pages are divided into 214 pages of "Contents" and 325 of "Notes", with much repetition; there are two pages of printer's errors, and should be more, to mention only the varied spelling of names and many incorrect Bible references; and there is no index. On pp. 84–5, the chief god of Western Akkad (Hamath) is given, from 2 Kings xvii, 30, as Ashima; and the author identifies him with Baal-peor (Num. xxv, 3), the god of the Moabites and Edomites, and with the god called in Egypt by the "Aramaic" name of Set. On p. 188, 2 Sam. 1, 18, is rendered as "he bade them teach the children of Judah cuneiform: behold it is written in the book of Jasher", though for "cuneiform" we read "use of the bow" in the Authorised Version and "song of the bow" in the Revised.

The main theme of the book is a fervent vindication of the historical truth of the Bible and an attack on modern Bible criticism, which has relegated the Mosaic books to a later date. From the 12th chapter of Genesis onwards the

Pentateuch is to be regarded as in the main historical and Moses is to be considered an historical person.

It is impossible to compress the author's equations into a small space, and an extract from Chapter 2 will illustrate his method and the ground he covers. In discussing the peoples called Subari in the cuneiform texts he states that they included many races of varied origin; that their country was Subartu, and that they were the Cush (Ethiopians) whose country is defined in Gen. ii, 13; that their name means burnt, *i.e.*, sunburnt; and that the wanderings of this Aramaic race may be traced by its gods, weights and measures from north to south via Syria to Egypt, and from east to west, to Greece and Italy. The author's argument, in short, is that the ancient names of countries, places, peoples and gods are derived from the Subari, and that as the Subari came from the Taurus region it is to Asia Minor we must look for the origin of "the system of weights and measures, of coinage, of alphabetic writing, and of the oldest codification of laws". L. B. E.

Exploration in Sind. By N. G. Majumdar. Pp. iii, 172, pls. 46, and map of Sind. Memoir 48 of the Archaeological Survey of India. 1934.

The survey of the deserted mounds of Sind made by Mr. Majumdar in three campaigns between 1927 and 1931 will prove of more and more importance as the problems which he has opened up are tackled by systematic excavation. This survey covered the greater part of the Indus Delta country and of the western bank and a portion of the eastern bank of the Indus in Lower Sind.

The outstanding result was the discovery at Amri and other sites of a culture that lies beneath and clearly antedates that of Harappā and Mohenjo-daro. The pottery of this earlier civilisation is identical with certain wares found by Sir Aurel Stein in S. Balūchistān and suggests western affinities.

Mr. Majumdar classifies the various kinds of pottery he found at the sites he visited in four groups :—

(A) Amri ware : thin, with geometric patterns painted in two colours on unpolished pinkish clay ; in shape not unlike the ware found at Nal in Balūchistān.

(B) Indus Valley ware : thick, well baked, with designs that include plants and animals painted in black on a well-polished red slip. The examples found by Mr. Majumdar at Chanhu-daro (now being excavated by the Boston Museum of Fine Arts Expedition) are finer than those from Mohenjo-daro, where unpainted wares came to predominate.

(C) Thin ware, with designs including stylized plants and flowers painted in black or chocolate on a light red or buff slip, as at Jhukar. This ware, the author suggests, may be later in date than the Indus culture as known at Mohenjo-daro and Harappā.

(D) Black ware with incised geometric ornament, comparable with certain Early Iron age ware of the Madras Presidency.

An interesting point recorded in this survey is the existence of a flint-knapping station at Tharro below Tatta, which shows this region of Lower Sind to have been dry land in prehistoric times.

The tentative conclusions based by the writer on what he saw suggest the great importance of a thorough exploration of the mounds of Sind by well equipped expeditions. Only one corner of the curtain that veils the India of the third and fourth millenia B.C. and the pre-Aryan sources of its complex civilisation has been lifted : the glimpse afforded might well arouse a larger curiosity and lead to adequate inquiry and investigation. D. M.

JOURNALS

ANNALS OF ARCHAEOLOGY AND ANTHROPOLOGY—UNIVERSITY OF LIVERPOOL. Vol. XXII, Nos. 1, 2. 1935.

GURNEY, O. R.—*Babylonian Prophylactic Figures and their Rituals.*—Of a wide variety of types, these figures are well known from the texts; and made of clay they have been found at Ur and Sippar. Two important texts are here discussed: Text I, a ritual for the protection and purification of a house; Text II, a bilingual composition concerned with the healing of the sick. D. M.

ARCHIV FUR ORIENTFORSCHUNG, IX, 1–2. 1934.

CHRISTIAN, V.—*Untersuchungen zur nordsyrisch-"hettitischen" Kunst.*—The writer's conclusions are as follows:—A geometric style, born of the Aegean migration of about 1200 B.C., appeared in Asia Minor, Northern Syria, and Mesopotamia, as in Greece, in place of the naturalism which had prevailed hitherto. It was carried presumably by the Phrygians and related peoples. In sculpture in the round this style maintained as far as was possible the cylindrical or cubist form dictated by the material, and in relief kept largely to the surface. From the previous period was, apparently, derived the principle of building with orthostats and of using reliefs for their ornamentation; numerous decorative motives, including animals, were, presumably, also derived from this source. The tendency to naturalism, which appeared at first gradually in Northern Syria and Mesopotamia, and more strongly from the outset in Asia Minor, must be considered as a return to the spirit of the art which had been ousted. This North Syrian "Hittite" art (the name is kept for the sake of convenience) vanished with the Assyrian conquest, but it certainly influenced Assyria, and presumably Persia of the Achaemenian period, via Armenia and Media.

BISSING, FREIHERR W. VON.—*Saitische Kopien nach Reliefs des Alten Reichs.*—A tablet which was dated by Borchardt to the IIIrd dynasty in *Ann. du Serv.*, XXVIII, pp. 43 ff., is considered here to be a Saïte copy of Old Kingdom reliefs

SCHWENZER, W.—*Das Nationalheiligtum des assyrischen Reiches.—Die Baugeschichte des Aššur-Tempels Ehursagkurkurra.—IV. Die Inschriften Salmanassars I. vom Aššur-Tempel.*—This article is a sequel to articles which appeared in vols. VII and VIII of this journal.

SPEISER, E. A.—*The Continuance of Painted Pottery in Northern Mesopotamia.*—In Northern Mesopotamia there was no break in the occurrence of painted pottery down to Persian times.

BARTSCH, G.—*Eine neue chetitische Skulptur in Mittel-Anatolien.*—A description of a piece of Hittite sculpture found in 1930.

BRANDENSTEIN, W.—*Die Sprache der Pisider.*—An attempt to decipher the inscriptions in Greek characters on stelae found at Sofoular in 1890 by Ramsay and Hogarth, and a denial of the belief that they contain names only.

DO., IX, 3. 1934.

PUDELKO, G.—*Altpersiche Armbänder.*—The history of early Persian art is traced in jewellery from its Chaldean-Hittite beginnings to its stifling by Greek elements.

Weidner, E. F.—*Die Feldzüge Šamši-Adads V. gegen Babylonien.*—A large inscribed limestone stela (Ashur 6596), which was found in the German excavations of 1905, has yielded important new material for the history of Assyria and Babylonia. It bears an historical inscription of Shamshi Adad V, the first part of which agrees with the inscription on his stela from Nimrûd, whilst the following part gives a description of the 5th and 6th campaigns against Babylonia. These campaigns may now be dated, the 5th to 814 B.C. and the four earlier ones to 821–815 B.C. The inscription names eleven gods of Dēr, and gives the fullest list known; it furthermore solves the riddle of Vat. 9628, which is now seen also to deal with the 5th campaign, and to complete and amplify the account on the stela.

Bossert, H. T.—*Das hethitische Pantheon.*—A continuation of the article in VIII, 6 (*A.E.E.*, 1933, iii, iv, p. 127), on gods figured as on a panther. The Cretan god on seals from Cnossos and Hagia Triada respectively is compared with the Hittite god Dadas, and the following problems are discussed: Does the word *dada* occur in the Hittite script with the meaning of "father"; is the meaning of *uru*, "big," confirmed in further passages; and is the reading obtained for the leg and foot ideogram confirmed in other words?

The shorter contributions include:—

Meissner, B.—*Omina zur Kenntnis der Eingeweide des Opfertieres.*—Twenty-two lines of cuneiform text, each giving an external characteristic of the sacrificial sheep from which the condition of its entrails might be deduced.

Prezworski, S.—*Altorientalische Altertümer aus polnischen Sammlungen.*—The first of a series of descriptions of little known antiquities in Polish collections, mostly of unknown provenance.

Frankfort, H.—*Einige Bemerkungen zur Sumerer-Frage.*—The age and duration of the Early Dynastic period, the first appearance of the Sumerians, and the El-Obeid period.

Do., IX, 4. 1934.

Van Buren, E. D.—*A Clay Relief in the 'Iraq Museum.*—The clue to the interpretation of this relief, which apparently belongs to the Larsa period, is given by the band-symbol on each side of the Mother-goddess. This band-symbol occurs singly on a limited number of objects, most strikingly on the *kudurru* of Melishipak from Susa, where it rests upon a knife lying on an altar, and must represent the goddess Ninḫursag. It is explained as a swaddling band, the symbol of Ninḫursag as goddess of childbirth.

Bossert, H. T.—*Nischan-Tepe und Nischan-Tasch.*—The discovery of part of a stone hammer of a known type in a hole in this inscription proved that the inscription was in existence when the fortress was destroyed about 1200 B.C., but the author of the inscription is not identified.

Do., IX, 5–6. 1934.

Senk, H.—*Die Proportionskanon in der ägyptischen Rundbildnerei.*—By taking measurements of three types of Old Kingdom statues (seated, standing and kneeling), the writer settles a vexed question by showing that there was a canon of proportion in Egyptian art, the unit being the head measured from the base of the neck to the growing point of the hair on the forehead. This unit is the only length of the body which is defined in a relatively clear way in those drawings of the human form which are plotted out in a "scaffolding"

(Schäfer's "*Hilfsgerüst*"), or network of squares, whilst in sculpture in the round the head unit is the only length which is uniformly present in all types. The use of this canon means that though statues were in proportion they were not in anatomical proportion.

Do., X, 1–2. 1935.

Weidner, E. F.—*Aus den Tagen eines assyrischen Schattenkönigs.*—The German excavations at Ashur brought to light a collection of 112 well preserved cuneiform clay tablets recording twelve consecutive months in the reign of Ninurta-tukul-Ashur, of whom very little had been previously known. This king seems to have reigned from 1154–1153 B.C., so that these tablets cover most of his reign. Fifty-one of them are in the Berlin Museum; the rest are presumably in the Museum of Antiquities at Istanbul. Forty-nine of the Berlin tablets have been published already, but four of these are given in cuneiform here for the first time. Of the other two, one bearing a seal impression only is discussed in a separate section of this article by Dietrich Opitz, and the remaining one is reproduced, transliterated, and translated here. The inscriptions on the sixty-one other tablets are transliterated and translated from photographs taken at the excavations, as the tablets themselves are not available.

Four tablets in this series bear seal impressions, three of which are the same, a king hunting ibex; the fourth is two eagle-headed creatures confronted. One of the tablets is stamped with the hunting scene only, without any inscription, and may, therefore, be considered to be the royal official seal. It is the only royal Assyrian seal known in which the king is depicted in person, and it takes the hunting scene a hundred years further back than it was known hitherto (*i.e.*, on the obelisk of Ashur-nasir-pal I).

Through this find more is known of this king than of many more important ones, for though the inscriptions record the receipt and issue of sheep, oxen, and goats, they incidentally reveal much of interest about the king, his court and harem, the extent of the realm at the time (greater than has been supposed), the gods, religious rites, etc. For instance, the eunuch received an ox as compensation for having been attacked by a lion. (The number of lions kept by the king cannot have been large, as they were allotted a sheep every other day only.) Among the craftsmen is mentioned an "iron" smith, and this is one of the earliest mentions of a worker in iron.

Van Buren, E. D.—*Entwined Serpents.*—The twelve illustrations to this article are from seals and seal impressions of which seven are in the 'Iraq Museum. They show the motive in its various forms, ranging from two rearing serpents coiled round each other one or more times to forms in which the convolutions are most intricate. This motive must have been in use over the greater part of the Near East. Entwined serpents are a very ancient illustration of the belief that serpents embodied the male and female principles and that their proximity bestowed a blessing on mankind. The most celebrated of all the representations of the motive is that on the vase of dark green steatite dedicated by Gudea to his god Ningizzida, and its representation here may be thought to be a very strong argument for accepting Frankfort's theory that the motive symbolized this god. But the writer finds it difficult to believe that such an ancient symbol could have been relegated to the position of an image of a minor deity whose importance waxed and waned with the lifetime of Gudea. He knows only one object with this motive belonging to a period after Gudea, namely, a serpentine amulet from Nippur. The motive then disappears and

re-emerges after many centuries transformed into the symbol of the god of healing, Asklepios.

Do., Vol. X, 3. 1935.

Bissing, Freiherr W. v.—*Geschnitzter Holzsarg persischer Zeit aus Ägypten.* —The coffin which is described and photographed in this article was formerly in the writer's collection in the Carnegielaan Museum at the Hague, but its present whereabouts are uncertain. The low arches which had been cut at the base point to its having been used as a hen coop. L. B. E.

Bull. of the Metropolitan Museum of Art, New York. XXX, 5. 1935.

Winlock, H. E.—*Faience Tiles from an Egyptian Palace.*—These tiles from el-Kantir, probably the city Raamses and scene of the Oppression of the Israelites, show the Pharaoh's enemies, bound and suppliant. A few that are more attractive have scenes of a canal with ducks and fish and lotus flowers, and of young girls carrying their pet gazelles. D. M.

Egyptian Religion. Vol. III, no. 2. April, 1935.

Foucart, G.—*Études Thébaines* (*Série* 2). *Les Voyages mystiques aux Villes Saintes.*—This is a portion of an article on the funeral scenes and ceremonies depicted in Theban tombs. The conclusion reached is at variance with some of the accepted views: the funerary scenes under discussion are said to be not specifically Theban and not to represent real funerals; to private tombs have been transferred the traditional equipment of fabulous and mythical royalty. It is assumed that the scenes represent funerary plays derived from myths and legends, which were celebrated or commemorated on traditional dates at Buto, Busiris, and Mendes, or on the sites of ancient kingdoms of the Libyan part of the Delta. These various plays are condensed on the walls of Theban chapels in the form of extracts, and make a composite picture there. The boats are there to take the deceased to each of the ancient sanctuaries so that he may take part in all these ceremonies.

Gaster, T.—*An Egyptological Text from Ras Shamra* (*R.S.*, 1929, *No.* 6).—This text, hitherto a complete enigma, reveals itself upon close examination to be a congratulatory ode addressed to the Egyptian overlord of Ugarit. That Ugarit (Ras Shamra) was for some time under Egyptian domination is known from (*a*) the Poem of Pentaur which describes its subjugation by Rameses II in the course of his Syrian campaigns; (*b*) the markedly Egyptian character of the remains excavated (see *A.E.E.*, June, 1934); and (*c*) Tell el-Amarna letter B.M. XXX (Bezold), in which the burning of one half of it by the Hittites is represented as a concern of the Egyptian Pharaoh. Excursus I deals with "Egyptianisms in the Text," and the second Excursus discusses Regal Odes in the Psalms. L. B. E.

Man. May, 1935.

Caton-Thompson, G.—*A Revision of Recent Research upon some Stone-Age Problems in North Africa.*—This summary of the Rivers Lecture calls for the proper recording of stone implements, with the local hydrography, wherever they are found by motoring and other parties in the Libyan Desert and Sahara. In the Khargeh Oasis "even in the Middle Paleolithic maximum of moisture" . . . "implements clung to the two areas of artesian mound-springs" and on the

scarp wherever springs and seepage or surface drainage gave a water supply. The various cultures are discussed, including the Upper Acheulian which appears to link with Palestine (Umm el-Qatifa and Tabūn F). D. M.

ORIENTALIA. Vol. IV (Nova Series). Fasc. 2. 1935.

TILL, W.—*Zu den Wiener koptischen Zaubertexten.*—These texts were formerly in the collection of the Archduke Rainer, and were published by Stegemann under that designation. They now form part of the National Library, and Till has studied them anew under better conditions.

WORRELL, W. H.—*Coptic Magical and Medical Texts* (cont.).—Three more texts are given in this article, of which the first is "a paragogic love charm, differing from others in that its purpose is honest love and matrimony." The second "deals with medicine rather than magic; for the medicamenta, irrational as they appear to us, are the sole means of treatment. There are no prayers or spells." L. B. E.

ZEITSCHRIFT FUR AEGYPTISCHE SPRACHE, LXX. 1934.

SCHÄFER, H.—*Die Simonsche Holzfigur eines Königs der Amarnazeit.*—This little wooden figure of a king of the Amarna period (Berlin 21836) is fully described and illustrated; the jewellery worn, the "blue crown", and the nature of the Amarna art are discussed in three appendices. The king is shown wearing his own beard. The gold necklace and the bracelets worn by the figure were royal jewellery; they are known in this association on statues of Amenhotep III and Amenhotep IV, and they occur among the votive offerings made to Amen by Thotmes III at Karnak, where they are described as "the jewellery (*'prw*) of His Majesty of gold and precious stones" and "the jewellery (*'prw*) which has protected the tomb of the god (*i.e.*, king)." This particular set of jewellery was also bestowed on the King's subjects as an award of valour in the XVIIIth dynasty. The little statue under discussion wears the "blue crown". Until conclusive evidence is available, Schäfer prefers to continue to use non-committal terms such as "blue crown", "blue cap", and "Nefertiti crown" for the three types of headgear.

BORCHARDT, L., KONIGSBERGER, O., and RICKE, H.—*Friesziegel in Grabbauten.*—Formerly, the pottery cones called "funerary cones" were thought to be paving stones, but they are here shown to have been parts of an ornamental frieze. The same technique is known in Mesopotamia, and in both countries the cones are of two kinds, some plain, and some stamped with the owner's name. The inference is that Egypt was influenced by Mesopotamia. This article was written before the writer had seen *The Egyptian Expedition* 1925–27, Section 2, of the *Bull. Metr. Mus. of Art*, Feb., 1928, pp. 6, 7, figs. 4 and 5.

REISNER, M. B.—*Inscribed Monuments from Gebel Barkal.—Part* 4, *The Stela of Prince Khaliut.*—This stela is No. 52 in the List of Monuments in Part 1, and is marked 52 in red on the plan of the temple. Prince Khaliut is definitely stated in the main inscription to be the son of King Piankhy, yet the tomb is stated to have been built by Aspalta, and it seems nearly impossible that Khaliut could have survived into this reign. A possible explanation is suggested by a statement in line 17 that Aspalta "had built tombs for those that had none". Khaliut may thus have died long before the reign of Aspalta, who may have enlarged the tomb or reburied him, setting up the stela in commemoration of this pious act.

SCHARFF, A.—*Ein Denkstein des Vezirs Rahotep aus der* 19 *Dynastie.*—

This stela—no. 287 in the Munich Glyptothek—has been described as belonging to the Horbêt finds (*Zeitschrift*, LXI, p. 63, note 2), but wrongly so, in the writer's opinion, since the Horbêt finds all commemorate humble folk, mostly soldiers. On the upper half of this stela Rameses II is shown censing his own statue, behind which are shown four ears, and in the lower half kneels the vizier Rahotep, praying to this statue.

Sethe, K.—*Das alte Ritual zur Stiftung von Königstatuen bei der Einweihung eines Tempels.*—This is a correction of the translation of some texts in the temple of Thothmes III at Medinet Habu, published in *Re'-Heiligtum des Rathures*, pp. 100 ff. The texts of two scenes announce the dedication of two statues of Thothmes III which were set up in the temple he had built for Amen; the texts of the other two scenes are an address to the statue in question, and are a counterpart of the final clauses of Speech 540, Pyr. 1332a.

Wilke, C.—*Zur Personifikation von Pyramiden.*—There are some instances in the Old Kingdom and one case in the Late Period of the personification of a pyramid; three modifications of this idea are discussed in detail here.

Kees, H.—*Zu einigen Fachausdrücken der altägyptischen Provinzialverwaltung.*—The administrative terms discussed in this article are: (1) The supposed title "Overseer ( ) of the southern door (of Elephantine)", of which there is no instance throughout the Old Kingdom and Middle Kingdom, and (2) the meaning of in Middle Kingdom documents.

Pieper, M.—*Das Märchen von Wahrheit und Lüge und seine Stellung unter den ägyptischen Märchen.*—Among the Chester Beatty papyri in the British Museum is the *Tale of the Blinding of Truth.* Parallels may be found in two Late Greek stories, confirming the view that Egypt has contributed to the world's storehouse of tales. In this story a happy ending seems indicated, and the writer thinks that the *Tale of the Doomed Prince* also ended happily.

Borchardt, L.—*Einige astronomisch festgelegte Punkte zweiter Ordnung im Neuen Reiche.*—The following conclusions are reached: (1) The Feast of Ptah of Memphis in year 34, mentioned in an inscription recently published by Jéquier (*Deux pyramides du Moyen Empire*, 13–15 and fig. 12), refers to the reign of Rameses II and was at the full moon. (2) Accepting the view that the accession of Seti I was the beginning of the "Era ἀπὸ Μενοφρέως", the date of the accession of Rameses II may be taken as 4 September (Calendar of Julius Cæsar), 1301 B.C. (3) The view that there is some truth in the Bentresht inscription derives some support from the fact that the Feast of Amen mentioned in the date on line 6 is shown to have been at the full moon. (4) A choice of dates may be given for the coronation and death of Rameses III and for the coronation of Rameses IV, respectively.

Huckel, R.—*Über Wesen und Eigenart der Pataiken.*—The faience figures of naked dwarfs without attributes are faithful reproductions of the dwarf condition known as *chondrodystrophia foetalis* or *achondroplasia* and have nothing to do with rickets. [Dr. Guest has already shown this in *Pathology and Art at El-Amarna* in *Ancient Egypt and the East*, 1933, p. 81 ff.]

Zyhlarz, E.—*Konkordanz ägyptischen und libyschen Verbalstammtypen.*—A recognition of the homogeneity between the Berber speech and a Libyan component of the ancient Egyptian language carries research in Old Egyptian into a new phase of knowledge.

Edgerton, W. F.—*A-lk=k "Cease"!*—In I Kh. 5, 6, *a-lk-k* is to be taken

as a true imperative, used with a suffix pronoun as direct object, and has no connection with ⲁⲗⲟⲩ (see the writer's study of the Egyptian imperative in *Studies presented to F. Ll. Griffith*, 1932, p. 63).

Stegemann, V.—*Zur Textgestaltung und zum Textverständnis koptischer Zaubertexte.*—This is a detailed criticism of certain passages in Kropp's *Ausgewählte kopt. Zaubertexte*, I–III.

The Miscellany consists of a short article by Sethe on the correct reading of priest; it is *ḫrw-ḥb.t*, a *Nisbe adjectiva*.

Zeitschrift für Aegyptische Sprache, LXXI. Part 1. 1935.

The first fourteen pages consist of a bibliography of the writings of Adolf Erman up to 31st October, 1934, compiled by H. Grapow. Books, pamphlets, and reviews are listed under twelve headings, and publications which have appeared independently (books or pamphlets) are marked.

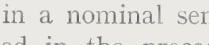
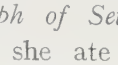
Schäfer, H.—*Altägyptische Bilder der auf- und untergehenden Sonne.*—These twenty-one pictures are to be found in the literature of the dead and in tombs of the later New Kingdom. They are explained by the writer as representing the whole course of the sun in the sky in one picture, though sometimes the rising and sometimes the setting is given greater emphasis. As Sethe explained these pictures as representing the rising sun only, the writer had intended to discuss his paper with Sethe before publishing it, but was prevented from doing so by Sethe's death.

Bissing, Freiherr W. von.—*Unterteil der Statuette eines Kamose.*—In this figure the end of the long tunic hangs down between the ankles, and this feature, together with the name Kamose, which is not known among private persons after the beginning of the XVIIIth dynasty, leads the writer to date the statuette not later than the first part of the reign of Thothmes III, though the mother's name, Rui, and certain peculiarities in the text would suggest a later date.

Bissing, Freiherr W. von.—*Ein angeblicher ägyptischer Rollzylinder der Übergangszeit.*—The cylinder seal discussed in this article has been dated by Sir Arthur Evans to the VI–XIth dynasty, but the writer classes it with "Hittite" cylinders of the second millenium, and reproduces the photographs of the two ends which are given in Delaporte's *Catalogue* (1910) *des cylindres orientaux et des cachets, etc., de la Bibliothèque Nationale*, pl. 34, No. 515 a–c, where a description is also given.

Wainwright, G. A.—*Amun's Meteorite and Omphaloi.*—To clear up a widespread misunderstanding of the nature of Amun's sacred objects at Thebes, Siwah, and Napata, the writer explains that the idols at Siwah and Napata were not meteorites but *omphaloi*, that is, dome-shaped objects of human manufacture, whilst there is much to suggest that the Theban fetish was a meteorite; probably, indeed, a portion of an iron meteorite. An interesting point arising from this possibility is that "it looks, therefore, as if both Amun and Seth were worshipped under the form, not merely of meteorites in general, whether of iron or stone, but specifically of iron meteorites".

Grapow, H.—*Die Himmelsgöttin Nut als Mutterschwein.*—In the "dramatic text" describing the sky in *The Cenotaph of Seti I at Abydos*, pl. 84, 1, 3, Nut is said to eat the stars and is called "the sow that eats her piglets" for so doing; moreover, in 11, 13 and 14 one star is called "the piglet of its mother". There is a representation of this aspect of Nut in a blue glazed sow with sucking pigs (B.M. 11976) inscribed on the base, "Nut, the great one, mother of the god(s)".

GRAPOW, H.—*Zum Gebrauch der alten Pronomina absoluta.*—The writer draws attention to some uses of the old absolute pronoun, , , , supplementing those already well known: (1) , etc., without introductory particle, as subject at the beginning of a sentence in a nominal sentence, *e.g.*, with *śdmf*, as in line 11 of the inscription quoted in the preceding article in *The Cenotaph of Seti I at Abydos*,  , "he, he said"; , "she, she ate" (l. 3); , "they, they live" (l. 7); (2)  , as subject after the verb in the sense of pseudoparticiple, 3rd person, feminine, *e.g.*, *nfrśy* "she is beautiful", often used for *nfrty*.

SPIEGEL, J.—*Zum Gebrauch der Apposition im Ägyptischen und Arabischen.*—The use of the apposition in Egyptian shows considerably more variety and complication than in our language, and corresponds exactly in its variety with the use of the apposition in Arabic. It may be classified as follows:—

(1) Apposition proper (complete identity).

(*a*) Ordinary apposition, *e.g.*, Amon-Ra, King of the gods.

(*b*) Apposition of numbers and measures (for numbers, see Sethe, *Von Zahlen und Zahlworten*, p. 46).

(*c*) Apposition of materials.

(*d*) Apposition of parts, *e.g.*, "a funeral offering, bread, beer, etc.," which we should have to amplify by "consisting of bread, beer, etc."

(*e*) Emphasizing apposition (tautology), *e.g.*, "twice", used after a sentence.

(2) Partial apposition, or, to borrow a term from Arabic grammar, "Badal apposition.

(*a*) In the complete form with pronoun, *e.g.*,

". . . to separate myself from the road" (more exactly, "from him who went on it") (*Sinehat*, R. 28–29, where the accepted translation, "to separate the road from him who went on it" makes no sense).

(*b*) In contracted form without pronoun.

"Badal" apposition occurs also in the extended passive participles and the relative forms, and also in forms with *ỉw . ty*. Everything that can be expressed by apposition can also be stated in the form of a sentence expressing identity. There are, therefore, sentences in Egyptian in which there is only partial identity between subject and predicate, and these are thus similar in nature to "Badal" apposition (*e.g.*, "Thine arm is Atum"). Moreover, as the relationship between words in apposition is the same as that between subject and predicate in sentences expressing identity, all kinds of apposition can be introduced by the *m* of equivalence.

(This essay was accepted as an Inaugural Dissertation by the Philosophical Faculty of the Friedrich-Wilhelms University of Berlin.)

STEGEMANN, V.—"ⲟⲩⲭⲱⲣⲉ ⲉ̀ⲃⲟⲗ=stark."—In ancient magical texts demons are sometimes characterized as "strong". This epithet occurs in Coptic magical texts as well as in Greek, but in four of these the words ⲭⲱⲣⲉ ⲉ̀ⲃⲟⲗ take the place of ⲭⲱⲣⲉ alone, with which *δυνατός* of the LXX is generally rendered. This phrase is traced to Ps. 103, 20, where angels are called *δυνατοὶ ἰσχύι*. These four texts belong to the 7th and 8th centuries, and it is significant of the spiritual change wrought in Egypt under the influence of Christianity to find that such a striking formula has penetrated into them.

MÜLLER, H.—*Die Mumie der Schep. en. ese in St. Gallen.*—This mummy and its two coffins have been at St. Gall for 110 years, but the place of origin is not known. It is tempting to regard the lady as the daughter of the man of her father's name and office, whose mummy is in Berlin, for her name is the same as his mother's and his father's name is the same as that which is presumably her grandfather's.

MISCELLANY.

This section is occupied by two short contributions: (1) a suggestion by H. D. SCHAEDEL that the time of day called *nw n śty r*^{3} (Erman-Grapow, *Wörterbuch*, IV, 350) really means "time of awakening", "breakfast time" being a secondary meaning; (2) confirmation by W. TILL of a suggestion made by him in *Zeitschrift*, LXIII, p. 98, for the reading of a phrase in 2 Macc. vi, 4, as ⲉⲩⲣ̄ⲙ̄ⲡⲁϫⲉⲩ ⲙ̄ⲙ̄ⲟⲓⲁⲙⲉ. He now considers that ⲙ̄ⲡⲁϫⲉⲩ stands for ⲙ̄ⲡⲧ-ⲁⲧ-ϣⲉⲩ from ϣⲉⲩ "useful", so that ⲣ̄ⲙ̄ⲡⲁϫⲉⲩ means literally "live as a good-for-nothing". L. B. E.

Other publications received:—

W. F. BADÈ, *A Manual of Excavation in the Near East.* 1935. (Univ. of California Press and Cambridge Univ. Press.) 7s.

Bull. of the Metropolitan Museum of Art, New York, Section II: The Egyptian Expedition 1934–1935.

The Private Life of the Ancient Egyptians, A Picture Book. Metropolitan Museum of Art, New York. (Bernard Quaritch, Ltd.). 25 cents.

Bull. of the American Institute for Persian Art and Archaeology, Vol. IV, No. 1, June, 1935.

Bull. of the American School of Prehistoric Research, No. 11. May, 1935.

Bull. of the Metropolitan Museum of Art, New York, XXX, No. 9, September, 1935.

Bull. of the Museum of Fine Arts, Boston, XXXIII, No. 199, October, 1935.

Iraq, Vol. II, part 2. October, 1935.

Journal of the American Oriental Society, Vol. 55, Nos. 2, 3. June, September, 1935.

Man, Vol. XXXV. June-December, 1935.

Palestine Exploration Fund Quarterly Statement. July, October, 1935.

The Oriental Institute of the University of Chicago, 1935. (Fourth Edition of the Handbook.) 35 cents.

The Quarterly of the Department of Antiquities in Palestine, Vol. IV, No. 4.

NOTES AND NEWS.

The fieldwork, and the associated publications, of the British School of Archaeology in Egypt will be proceeded with as usual this season, despite the discontinuance of Ancient Egypt and the East. Two sites will be under excavation: Sheikh Zowaiyid (the ancient Anthedon), on the Egyptian side of the Palestine-Egyptian frontier, and Tell Ajjul, near Gaza. At the former, Sir Flinders and Lady Petrie began work in November, assisted by Mr. Ellis and Mr. Pape, and a group of new students, Miss V. Seton-Williams, Dr. and Mrs. Teasdale, and Mr. Waechter. The excavation of the Palestinian site, Tell Ajjul, will be resumed in January, it is hoped, by Dr. Margaret Murray, assisted by Dr. Edith Guest and members of the staff from Sheikh Zowaiyid.

* * * * *

Among the many excellent results of last season's excavations it would seem invidious to mention some and not others. But the importance of Mr. M. E. Mallowan's work at Tell Chagar Bazar on an ancient caravan route, 30 miles S.W. of Nisibin, is outstanding in that it supplies a clear sequence of pottery and other objects from prior to 4000 B.C. down to *c.* 1400 B.C. The mound was found to contain fifteen settlements superimposed, and it was excavated down to virgin soil some sixteen metres below plain level. This may prove to be a key site in the study of the many types of painted pottery that in prehistoric times extended right across Asia as far as China and the Indus valley.

* * * * *

We have to record the appointment of Mr. P. L. O. Guy to succeed Mr. J. W. Crowfoot as Director of the British School of Archaeology in Jerusalem on the latter's retirement. Mr. Guy is also undertaking a survey of a dolmen field in Transjordania with the grant associated with a Fellowship of the British School of Archaeology in Iraq.

* * * * *

The success of Professor Baxter and his colleagues of the St. Andrews University expedition in clearing several remarkable mosaics in the ancient Palace of Byzantium has raised the question of the establishment of a British Institute of Archaeology at Istanbul. It is reported that the Turkish authorities regard the project with a favourable eye.

* * * * *

The appointment of Dr. L. W. G. Malcolm, whose work at the Wellcome Historical Medical Museum is well known, as Organiser of Museums to the L.C.C. is an experiment which will be watched with interest. This is a newly created post which promises to fill a great want in co-ordinating the work of the museums and the schools.

* * * * *

In the article on Coptic Painted Pottery in the last number of Ancient Egypt and the East, it was stated that "museum authorities refuse to accept it [*i.e.*, Coptic pottery] or relegate it to store-rooms." The British Museum must be exempted from this accusation; it has always led the way in the study of this otherwise neglected subject, and has given Coptic pottery its full value in its galleries.

* * * * *

Inquiry is being made by the Egypt Exploration Society for photographs of the temple at Armant that are known to have been taken by F. Frith in 1857, and by MM. du Camp and Félix Teynard. The Robert Mond Expedition to

Armant hopes to make a reconstruction of the temple built by Cleopatra and of the scenes on its walls, and the loan of these or other photographs, and any information from old books and diaries, would be welcomed at headquarters (200 Euston Road, London, N.W.1.).

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The Second International Congress of Prehistoric and Protohistoric Sciences will be held at Oslo in August, 1936. Particulars may be obtained from the Bureau of the Congress, Universitetets Oldsaksamling, Oslo.

OBITUARY.

JAMES HENRY BREASTED.

1865–1935.

Dr. J. H. Breasted will be remembered not only as a distinguished archaeologist but as an organiser of remarkable ability. To his genius for organisation combined with the generous financial support of Mr. J. D. Rockefeller, jun., is due the Oriental Institute of Chicago, whose widespread activities in the Near and Middle East and well equipped research at home are helping towards a much needed co-ordination in the study of the ancient civilisations.

It was with Egyptian archaeology that Dr. Breasted's name was first associated, but from early days he had visions of man's history as a single whole, of which Egyptology formed but one facet. His book for students, *Ancient Times, a History of the Early World,* was a first result of that view: the Oriental Institute followed naturally.

An indefatigable traveller, Dr. Breasted took the earliest opportunity after the war to make a preliminary survey of those regions of the Near East that it made accessible for archaeological study. In 1920 he arrived in Jerusalem from Mesopotamia and Syria, full of delightfully infectious enthusiasm and particularly pleased with the ancient wall-paintings at Salahiyah on the Euphrates which had been discovered by chance during the war.

Despite his apparently tireless activity in the direction of archaeological research in so many countries and along many diverse lines of inquiry, Dr. Breasted yet found time for works of deep erudition as well as books of more popular appeal.

C. H. CORBETT.

The British School of Archaeology in Egypt has lost one of its most devoted helpers by the death of Mr. C. H. Corbett, who for many years has been its Honorary Treasurer. Mr. Corbett spared himself no trouble in promoting the welfare of the School and was untiring in his work. He was not an archaeologist but a barrister, and as such his work for the School was known only to those who worked with him, but to them he will remain an example of self-devotion and unwearied zeal.

M. A. M.

SENATOR PAOLO ORSI.

1859–1935.

The illustrious Italian archaeologist, Paolo Orsi, made himself a reputation far beyond the boundaries of his country by his unremitting labours, chiefly in Sicily and Calabria. By his exploration of the Neolithic villages of Stentinello

and of many cemeteries, he brought to light four periods of Siculan culture, from the Chalcolithic age of the second millenium B.C. down to the time when the culture of Greece submerged that of Sicily in the fifth century B.C. At Locri he excavated the only known Ionic temple in Magna Graecia and discovered the famous *pinakes*.

JAMES EDWARD QUIBELL.

The passing of Edward Quibell leaves a blank in the lives of many, for a man more beloved by a wider circle of friends would be difficult to find. Quibell began his career as an Egyptologist in 1893, when he went with Petrie to Koptos. At this time the history of Egypt did not go back beyond the IVth dynasty; nothing was known of any connection with foreign countries, and Herodotus was regarded with contempt as the Father, not of History, but of Lies. The Koptos excavations showed that history extended perhaps to a Ist dynasty, a startling theory. The year following saw the excavations at Naqada and Ballas, where the finds were so extraordinary that no one could date them, for to suggest a prehistoric period in Egypt was practically blasphemy. When some years later de Morgan proved the predynastic date of the Naqada finds the whole of that civilisation fell into its proper sequence. But Quibell's chief claim to fame as an excavator was his work at Hierakonpolis. His epoch-making discovery of the slate-palette and mace-head of Narmer and the mace-heads of still earlier kings brought him to the forefront of Egyptologists and gave him a European reputation. After some years spent in excavation he entered the Government service, and when an Englishman was required to hold a position in the Cairo Museum the choice fell on him.

Throughout his life whatever difficulties might beset his path, Quibell went his serene way and won through by means of his transparent honesty, his sincere kindness, his unfailing tact and his personal charm. When he retired from the Museum, and from the work and the country that he loved, there came the darkest period of his life; for before he had been a few months in England he lost his wife. Later, some happiness came to him; on Firth's death the Department asked him to continue the work on the Step-pyramid. His finds there were very remarkable, and he was looking forward to some years of work on the site when death overtook him. He has left a gap in the little band of Egyptologists which can never be filled. M. A. M.

SIR TEMISTOCLE ZAMMIT.

Professor Zammit's training was that of a biologist; and for many years he was associated with the band of scientists engaged in discovering the cause of Malta fever. His investigations among the goats took him to practically every farm in the island, and his kindness and geniality secured him a welcome wherever he went, so that his equal interest in the "big old stones" was well known among the country people. Therefore it was not surprising that a farmer at Tarxien—a village on the cliff to the west of Grand Harbour—came to him one day and said, "My fields are full of big stones. Please come and look at them and clear them away." Then began the excavation of the most wonderful and complete megalithic temples in the Mediterranean area. Zammit's publication in *Archaeologia* of his finds drew the attention of more than the archaeological world to Malta, even in the last years of the war. His careful observation

and records established a sequence of dates within the island itself, though hitherto no satisfactory connection with other countries has been found for his Neolithic period. As Director of the Valletta Museum and Director of the Archaeological Department, appointments which he held till his death, he was in touch with all discoveries in Malta and Gozo, and he was as keen at the end as he was at the beginning. He had, however, two grievances with which, I venture to think, most people will sympathise. The first was a small one : he complained that when tourist ships called at Malta the passengers were taken willy-nilly to the San Antonio Gardens, whereas they should have had the choice of visiting the Tarxien temples and Hypogeum. More serious was his indignation at stopping the investigation of Malta fever as soon as the host was discovered from which the parasite is communicated to man ; so that even now there seems no certainty as to how the goats are infected. As Government would do nothing he used to buy a few goats yearly and make his experiments quietly ; he made a few discoveries, but it is an investigation which requires team-work and a large sum of money before the islands can be cleared of this scourge.

Alike in archaeology and biology the death of Temistocle Zammit leaves the world poorer M. A. M.

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